

FALLING BEHIND West Virginia & USA Playing the Game of Health Without a Scoreboard

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The 2012 West Virginia
Public Health Symposium:

Prevention,
Surveillance and
Response

My History

Mathematics

Medical school

Remote Nepal: *infections there among poorest*

Emergency Medicine *of poverty*

US health status

Efforts since

Thanks Danae Bixler, MD, MPH

Director, Infectious Disease Epidemiology

Bureau for Public Health

AGENDA

SURVEILLANCE Quiz

West Virginia

Why is our health status so poor

- Inequality is killing us
- First 1000 days matter most for our health

PREVENTION Challenge to everyone

RESPONSE

- Make comparisons with healthier nations
- Inform all of us
- Push policies

WORKSHOP

VITAL signs

Individual

- Infant
- Child
- Adult

Community

State

Country

Killer Facts

Surveillance QUIZ

True

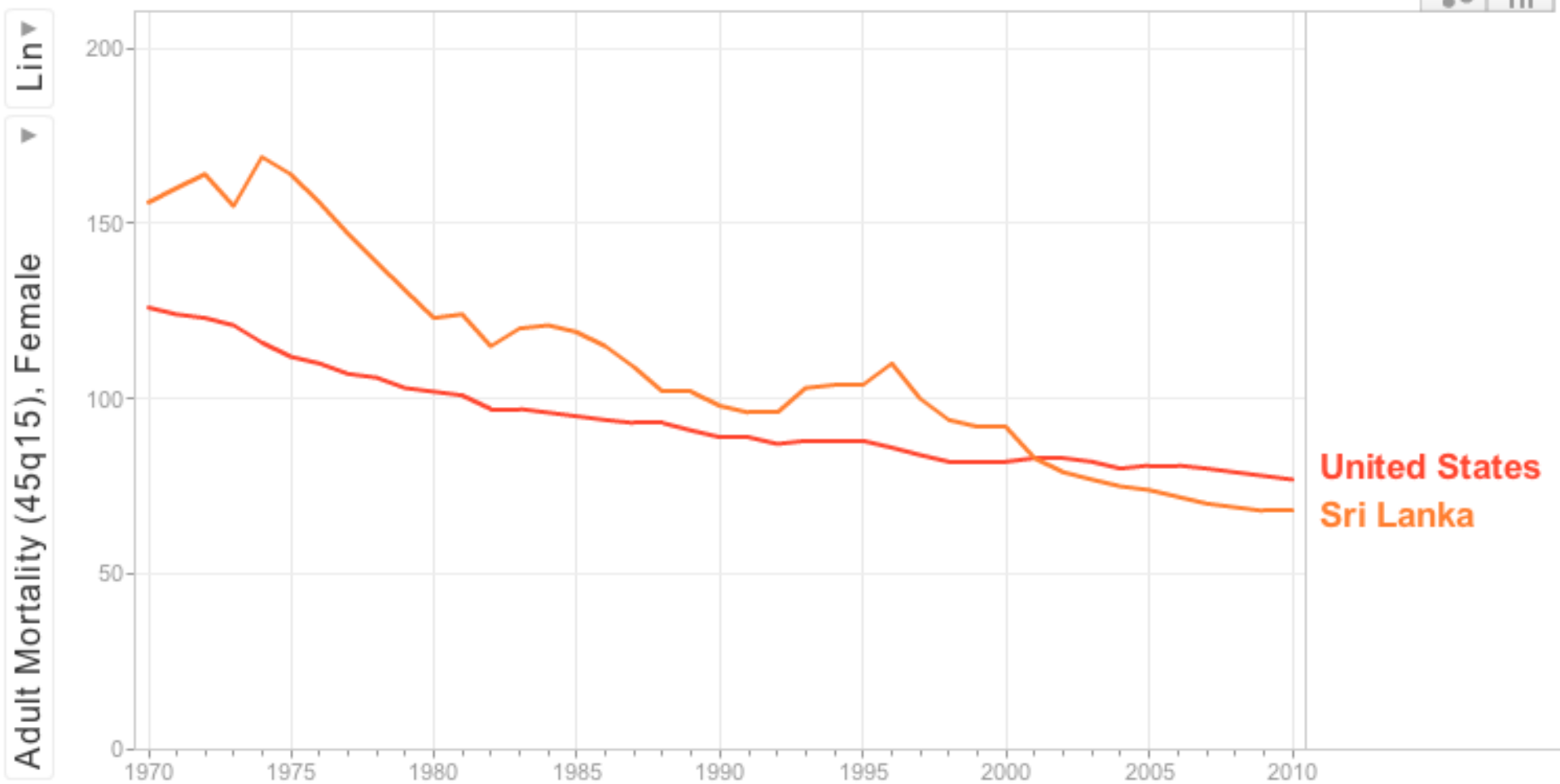
False

A 15 year old girl in the US has a smaller chance of dying before reaching age 60 than a similarly aged girl in Sri Lanka.



Sri Lanka US

Adult Female Mortality 1970-2010



Surveillance QUIZ

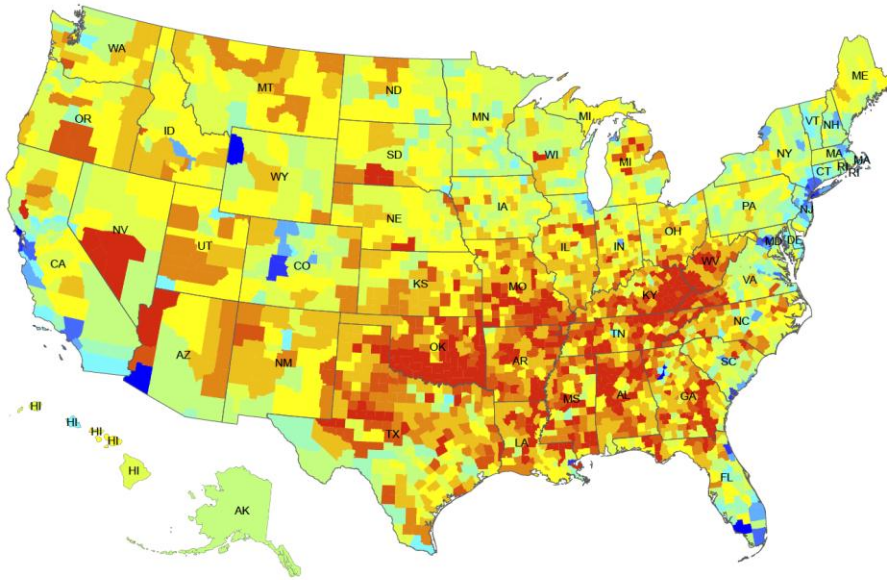
True

False

During the period of 1987 to 2007 life expectancy for women declined in almost 30% of US counties (which was not so for the previous 20 years).

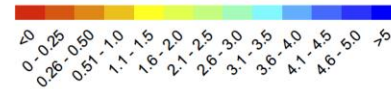
US County Life Expectancy Trends 1987-2007

Female

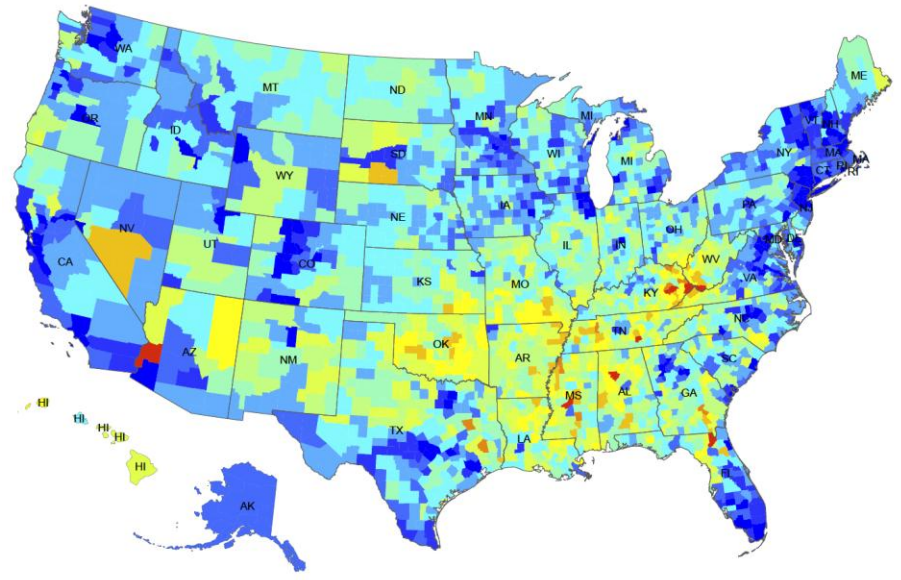


Change in years of life expectancy in US counties from 1987 to 2007

female

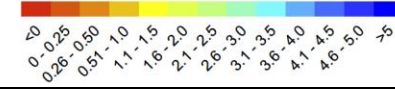


Male



Change in years of life expectancy in US counties from 1987 to 2007

male



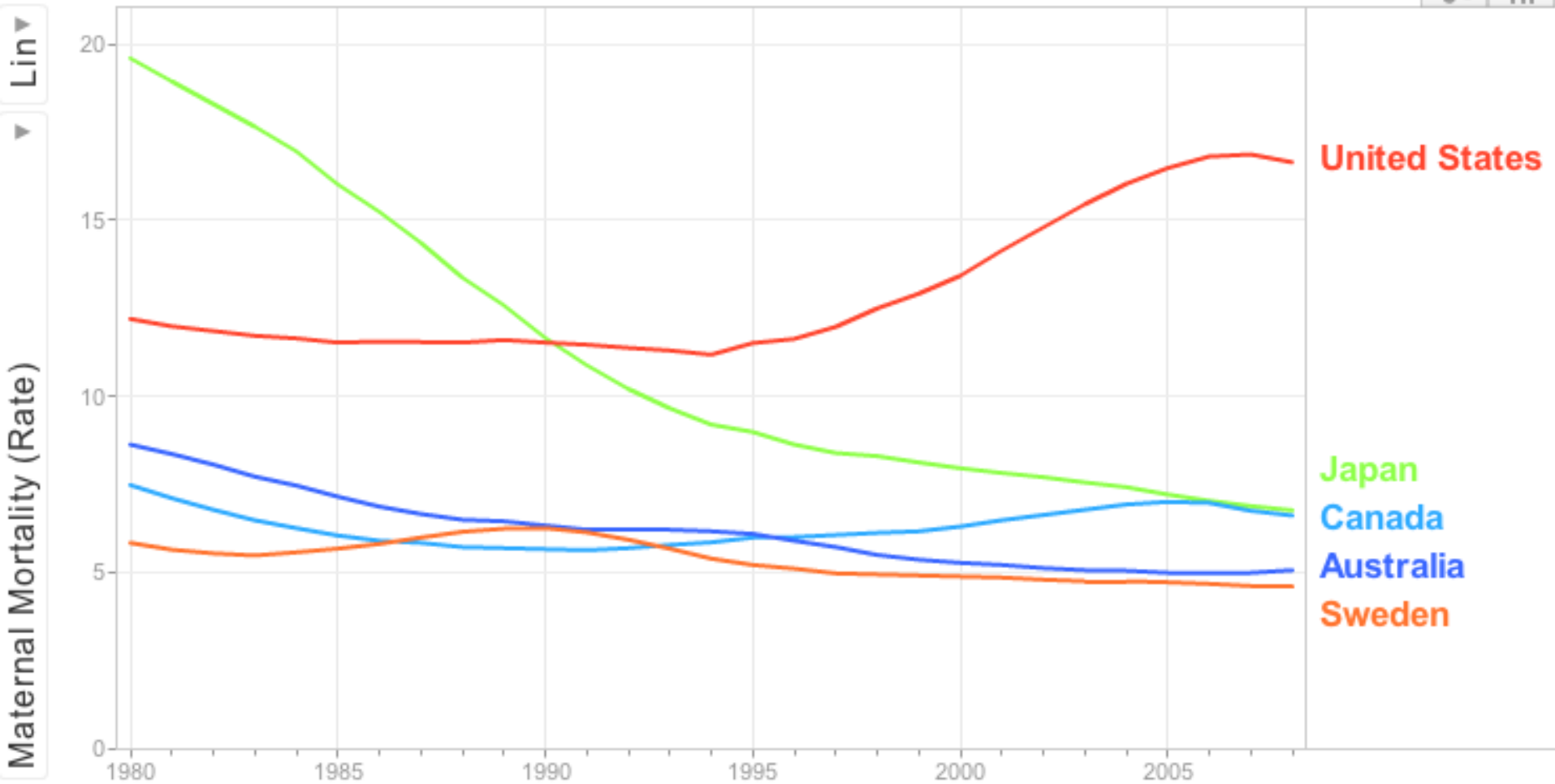
Surveillance QUIZ

True

False

Maternal mortality in the US has increased 50% over the last 15 years.

Australia, Canada, Japan, Sweden US Maternal Mortality 1970-2010





SURVEILLANCE

All-time
Olympic-medal
standings

U.K.

790.5

FRANCE

667

U.S.

2406

GERMANY

702.5

USSR

1,122

SOURCE: NBC.COM

Time magazine July 30, 2012 + web update



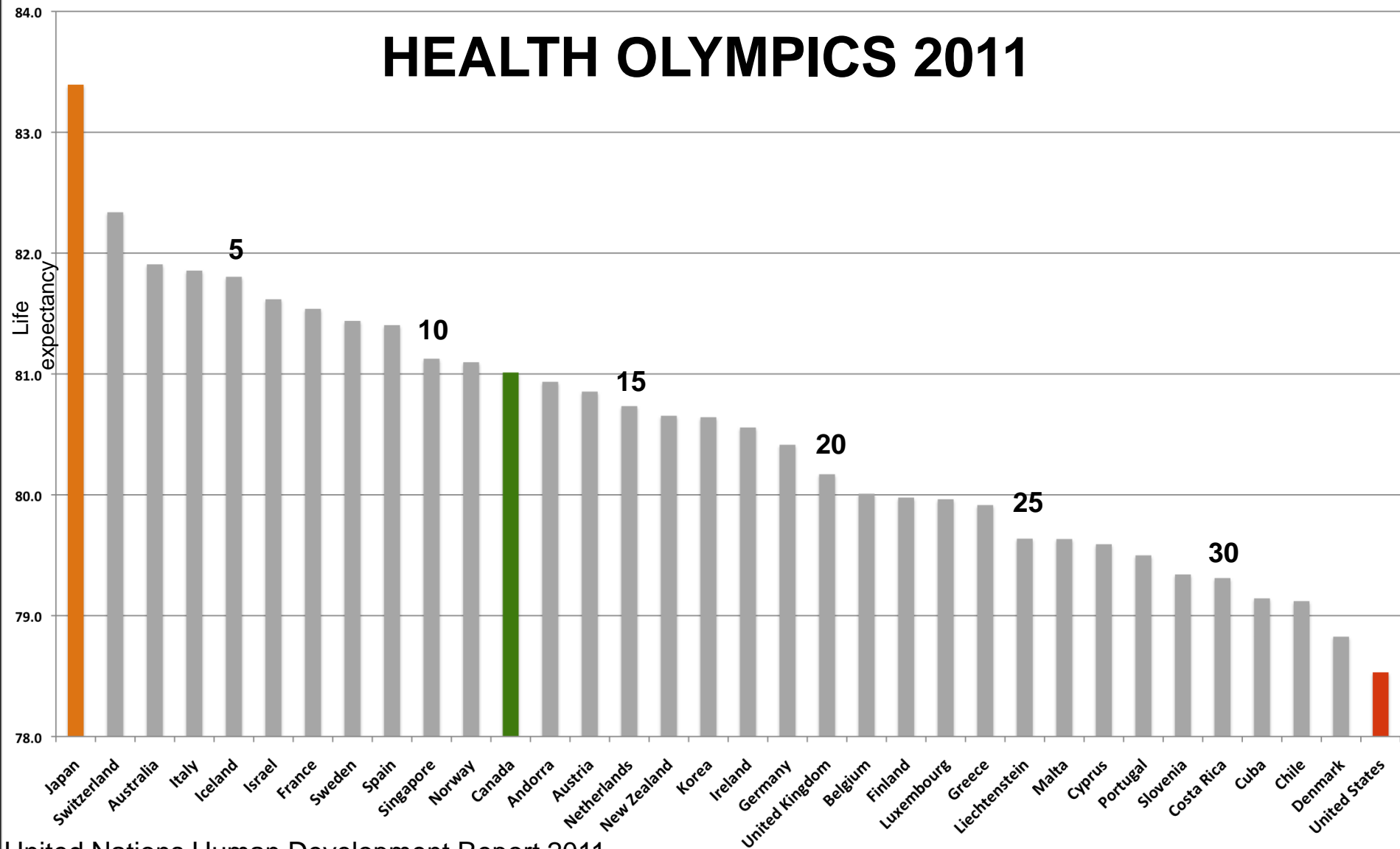


How healthy is the US?

Health Olympics

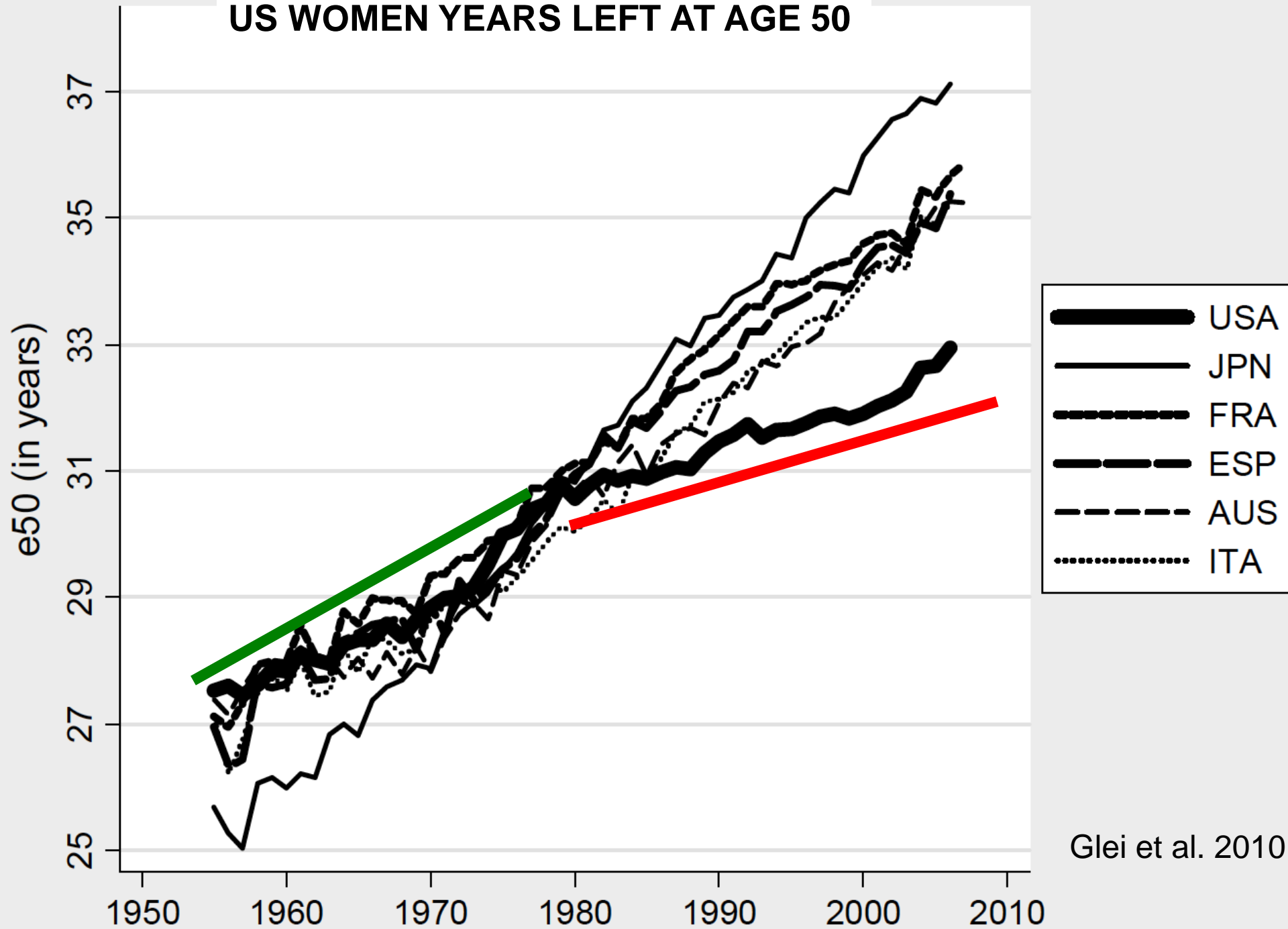
| | | |
|-----------------|-------|-------|
| Number one Gold | 16-20 | _____ |
| 1-5 _____ | 21-25 | _____ |
| 6-10 _____ | 26-30 | _____ |
| 11-15 _____ | 31+ | _____ |

HEALTH OLYMPICS 2011



United Nations Human Development Report 2011

US WOMEN YEARS LEFT AT AGE 50



Glei et al. 2010

Maternal Mortality Olympics (2008)

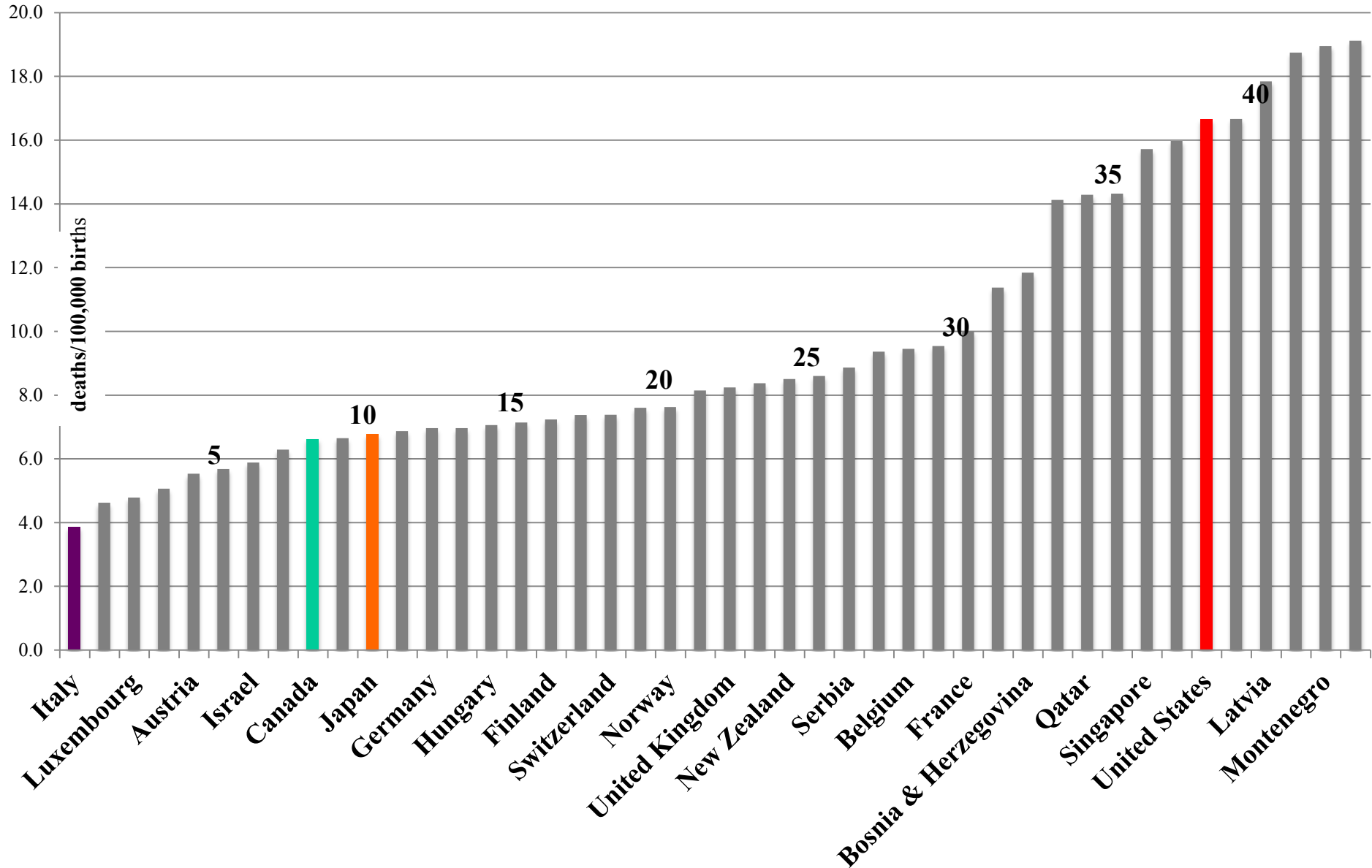




Table 20. Infant mortality rates and international rankings: Organisation for Economic Co-operation and Development (OECD) countries, selected years 1960–2008

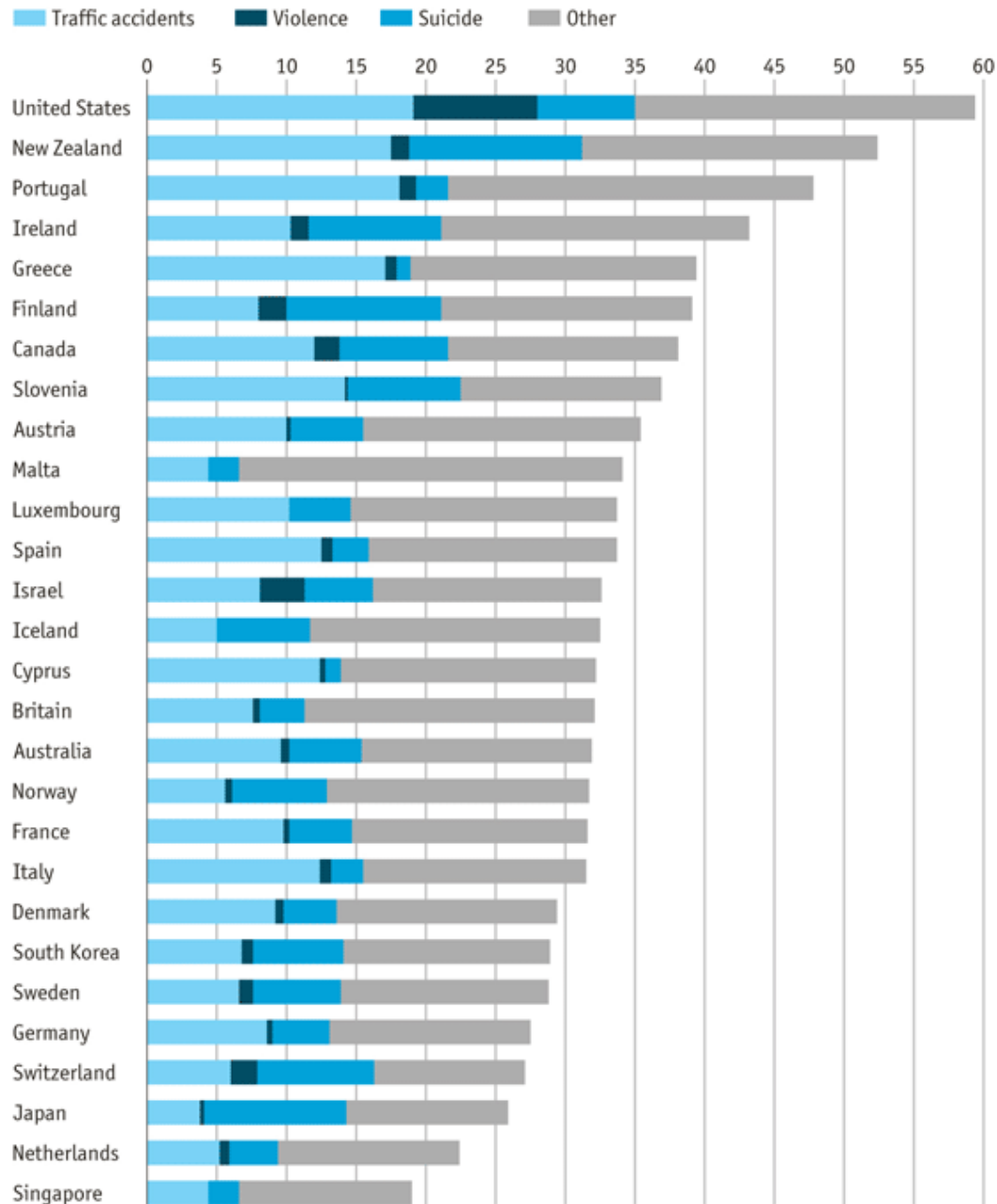
Updated data when available, Excel, PDF, and more data years: <http://www.cdc.gov/nchs/hus/contents2011.htm#020>.

[Data are based on reporting by OECD countries]

| Country ² | 1960 | 1970 | 1980 | 1990 | 2000 | 2006 | 2007 | 2008 | International rankings ¹ | |
|--|-------|-------|-------|-------|------|------|------|------|-------------------------------------|------|
| | | | | | | | | | 1960 | 2008 |
| Infant ³ deaths per 1,000 live births | | | | | | | | | | |
| Australia | 20.2 | 17.9 | 10.7 | 8.2 | 5.2 | 4.7 | 4.2 | 4.1 | 6 | 21 |
| Austria | 37.5 | 25.9 | 14.3 | 7.8 | 4.8 | 3.6 | 3.7 | 3.7 | 20 | 13 |
| Belgium | 31.4 | 21.1 | 12.1 | 8.0 | 4.8 | 4.0 | 3.9 | 3.7 | 18 | 13 |
| Canada | 27.3 | 18.8 | 10.4 | 6.8 | 5.3 | 5.0 | 5.1 | --- | 13 | --- |
| Chile | 120.3 | 79.3 | 33.0 | 16.0 | 8.9 | 7.6 | 8.3 | 7.8 | 28 | 28 |
| Czech Republic | 20.0 | 20.2 | 16.9 | 10.8 | 4.1 | 3.3 | 3.1 | 2.8 | 5 | 7 |
| Denmark | 21.5 | 14.2 | 8.4 | 7.5 | 5.3 | 3.5 | 4.0 | 4.0 | 9 | 19 |
| Finland | 21.0 | 13.2 | 7.6 | 5.6 | 3.8 | 2.8 | 2.7 | 2.6 | 7 | 3 |
| France | 27.7 | 18.2 | 10.0 | 7.3 | 4.5 | 3.8 | 3.8 | 3.8 | 14 | 15 |
| Germany | 35.0 | 22.5 | 12.4 | 7.0 | 4.4 | 3.8 | 3.9 | 3.5 | 19 | 11 |
| Greece | 40.1 | 29.6 | 17.9 | 9.7 | 5.9 | 3.7 | 3.5 | 2.7 | 21 | 5 |
| Hungary | 47.6 | 35.9 | 23.2 | 14.8 | 9.2 | 5.7 | 5.9 | 5.6 | 24 | 24 |
| Iceland | 13.0 | 13.2 | 7.7 | 5.9 | 3.0 | 1.4 | 2.0 | 2.5 | 1 | 1 |
| Ireland | 29.3 | 19.5 | 11.1 | 8.2 | 6.2 | 3.6 | 3.1 | 3.8 | 16 | 15 |
| Israel ⁴ | --- | 22.7 | 15.6 | 9.9 | 5.5 | 4.0 | 3.9 | 3.8 | --- | 15 |
| Italy | 43.9 | 29.6 | 14.6 | 8.1 | 4.3 | 3.6 | 3.5 | 3.3 | 23 | 8 |
| Japan | 30.7 | 13.1 | 7.5 | 4.6 | 3.2 | 2.6 | 2.6 | 2.6 | 17 | 3 |
| Mexico | 92.3 | 80.9 | 52.6 | 39.2 | 19.4 | 16.2 | 15.7 | 15.2 | 27 | 30 |
| Netherlands | 16.5 | 12.7 | 8.6 | 7.1 | 5.1 | 4.4 | 4.1 | 3.8 | 3 | 15 |
| New Zealand | 22.6 | 16.7 | 13.0 | 8.4 | 6.3 | 5.1 | 4.8 | 5.0 | 11 | 23 |
| Norway | 16.0 | 11.3 | 8.1 | 6.9 | 3.8 | 3.2 | 3.1 | 2.7 | 2 | 5 |
| Poland | 54.8 | 36.7 | 25.5 | 19.3 | 8.1 | 6.0 | 6.0 | 5.6 | 25 | 24 |
| Portugal | 77.5 | 55.5 | 24.3 | 10.9 | 5.5 | 3.3 | 3.4 | 3.3 | 26 | 8 |
| Republic of Korea | --- | 45.0 | --- | --- | --- | 4.1 | 3.6 | 3.5 | --- | 11 |
| Slovak Republic | 28.6 | 25.7 | 20.9 | 12.0 | 8.6 | 6.6 | 6.1 | 5.9 | 15 | 26 |
| Spain | 43.7 | 28.1 | 12.3 | 7.6 | 4.4 | 3.5 | 3.5 | 3.3 | 22 | 8 |
| Sweden | 16.6 | 11.0 | 6.9 | 6.0 | 3.4 | 2.8 | 2.5 | 2.5 | 4 | 1 |
| Switzerland | 21.1 | 15.1 | 9.1 | 6.8 | 4.9 | 4.4 | 3.9 | 4.0 | 8 | 19 |
| Turkey | 189.5 | 145.0 | 117.5 | †51.5 | 31.6 | 16.9 | 15.9 | 14.9 | 29 | 29 |
| United Kingdom | 22.5 | 18.5 | 12.1 | 7.9 | 5.6 | 5.0 | 4.8 | 4.7 | 10 | 22 |
| United States | 26.0 | 20.0 | 12.6 | 9.2 | 6.9 | 6.7 | 6.8 | 6.6 | 12 | 27 |

Causes of mortality in young people

Selected countries, deaths of 10- to 24-year-olds per 100,000 population, 2009*



Source: The Lancet, George Patton, Murdoch Children's Research Institute and University of Melbourne

*Or latest available

US Health Ranking

TABLE 1-1 U.S. Health Rankings

| Source | U.S. Ranking (U.S./Total) | | |
|--------|--|----------------------------------|----------------------------------|
| | Life Expectancy | Infant Mortality | Maternal Mortality |
| UN | 28/146 (2005-2010 data) | 32/146 (2005-2010 data) | n/a |
| OECD | 26/34 (2007 data) | 31/34 (2007 data) | 25/34 (2007 data) |
| CIA | 50/221 (2011 estimated data; in 2010 data, U.S. ranked 49th) | 174/222 (2011 estimated data) | 121/172 (2011 estimated data) |

NOTE: n/a = not available.

SOURCES: CIA, 2011; NRC, 2011; OECD, 2011; United Nations, 2009.



IOM 2012

1st & 4th yr US medical student knowledge of Population Health (2002)

| Question | INCORRECT |
|--|-----------|
| US has higher life expectancy than any other nation? | 32% |
| US has lower infant mortality than any other nation? | 34% |



How healthy is the US?

Health Olympics

Number of

1-5

6-10

11-15



SUMMARY

AT BEST our health in USA that of middle-income country

All of us die younger than we should

History of political choices regarding sharing societal resources PRIME REASON

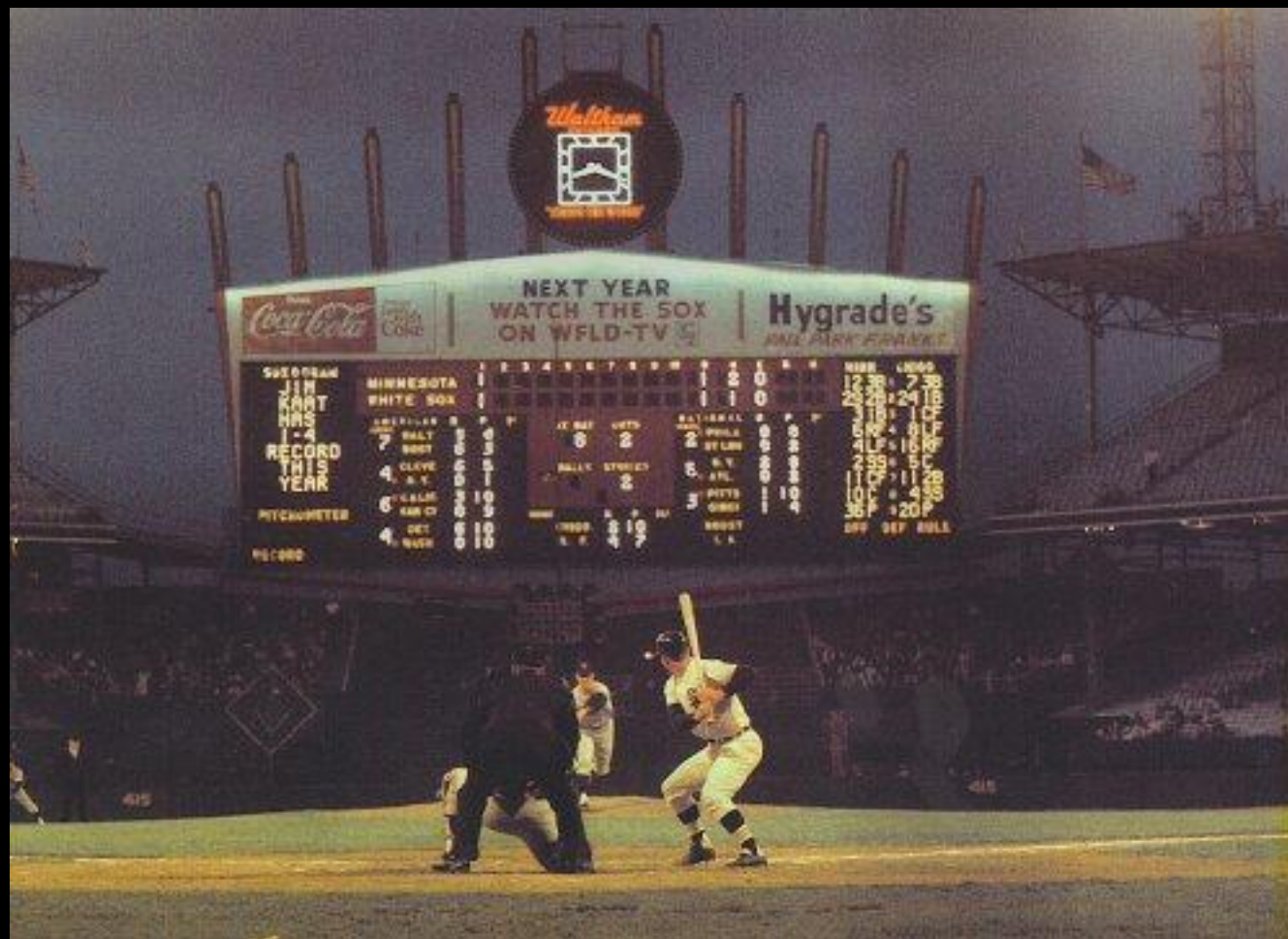
Early life is critical for adult health

Need set health goals for nation

US states and local jurisdictions need inform

National response is required

Playing Game of Health without a scoreboard



Health not a goal in the USA

Desired End Points?

Life, Liberty, **Pursuit**

POPULATION HEALTH

Health Inequalities (poorer people have poorer health)

Early Life: critical for adult health

Survival Ratio on the Titanic

Crew

24%

3rd Class

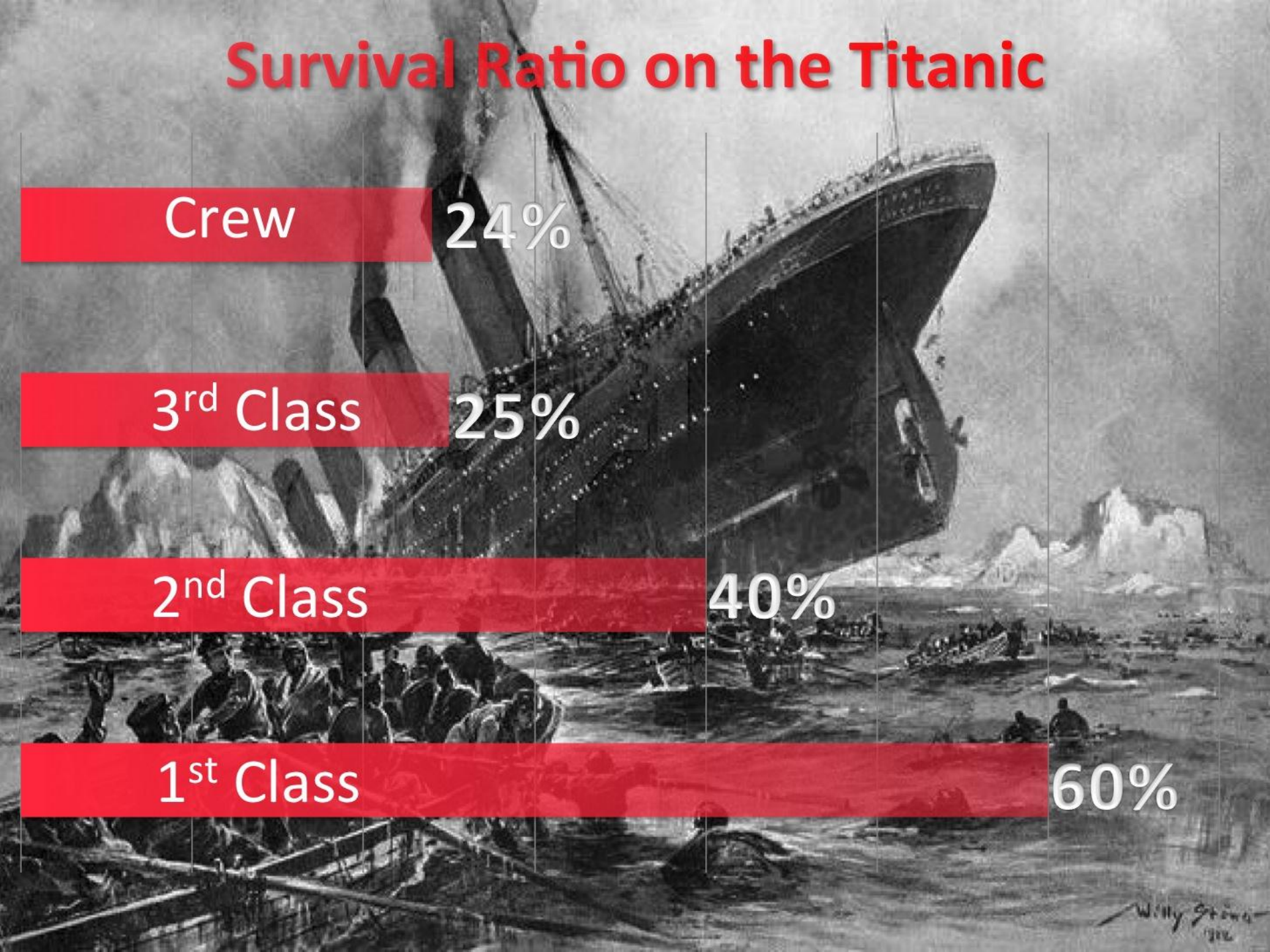
25%

2nd Class

40%

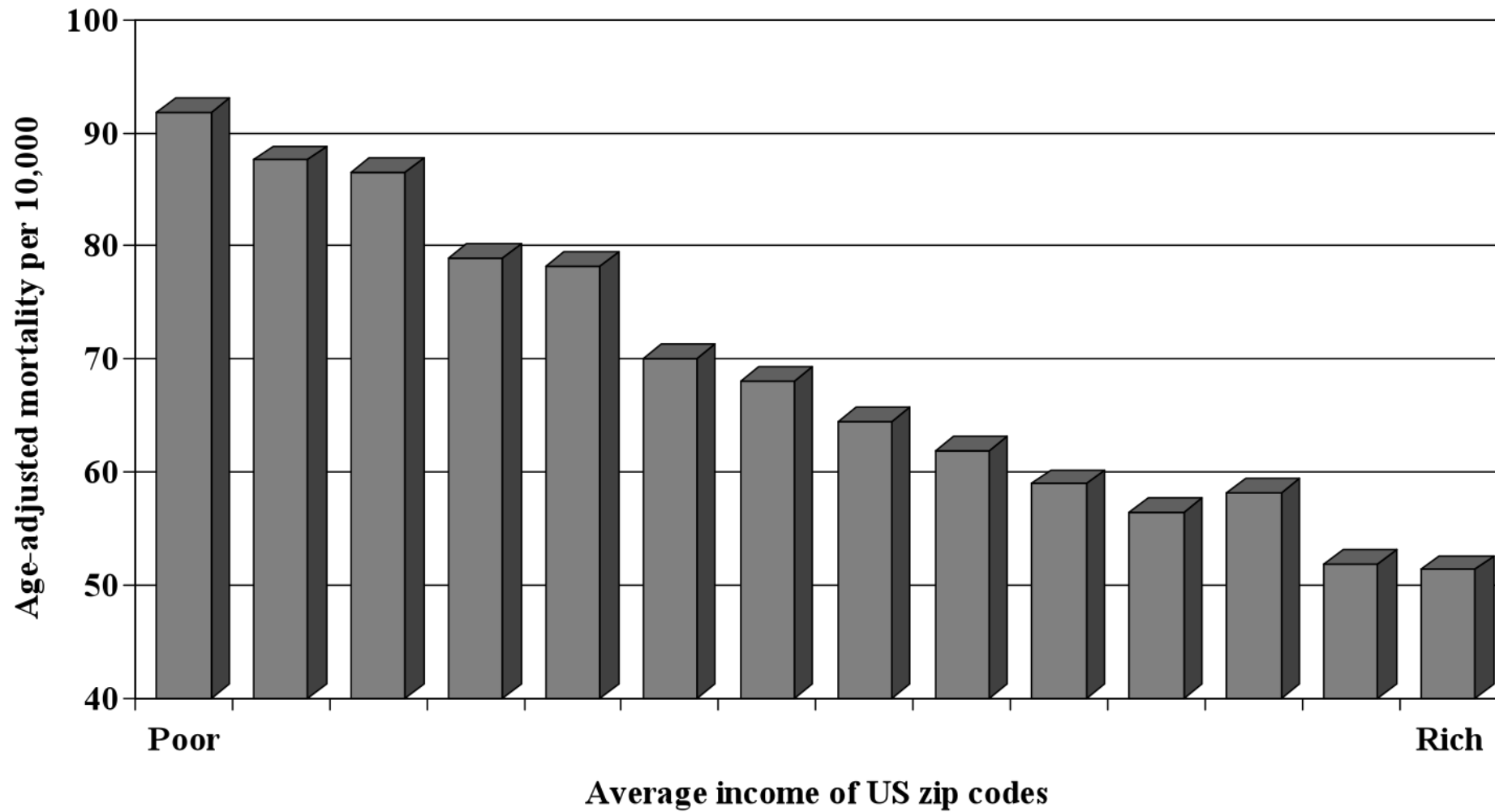
1st Class

60%



Willy Stöwer
1916

US MORTALITY RATES BY ZIP CODE INCOME

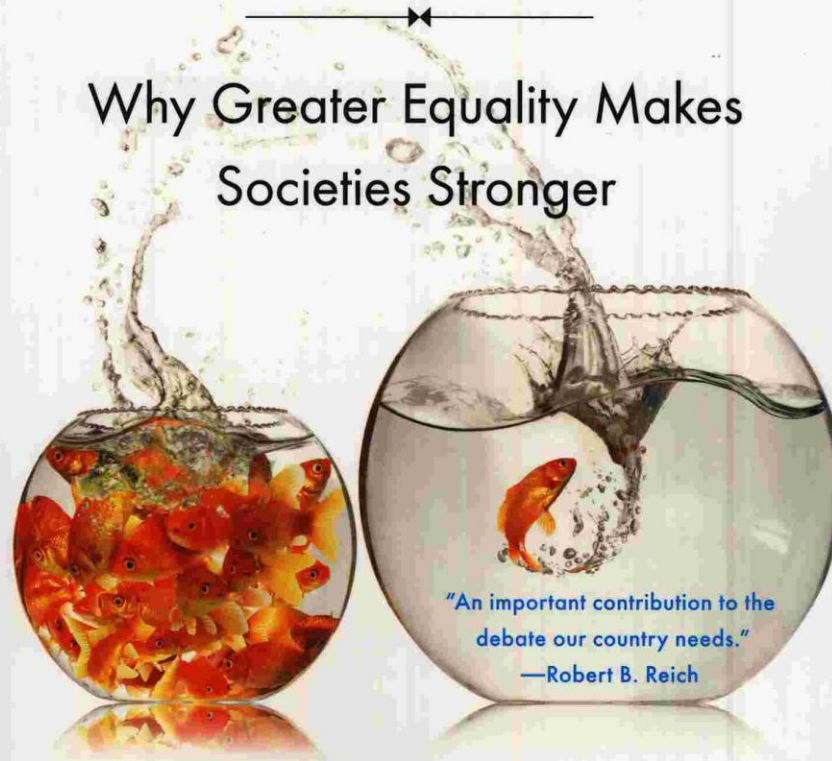


PRIMAL PREVENTION

INTERNATIONAL BESTSELLER

THE SPIRIT LEVEL

Why Greater Equality Makes
Societies Stronger



"An important contribution to the
debate our country needs."

—Robert B. Reich

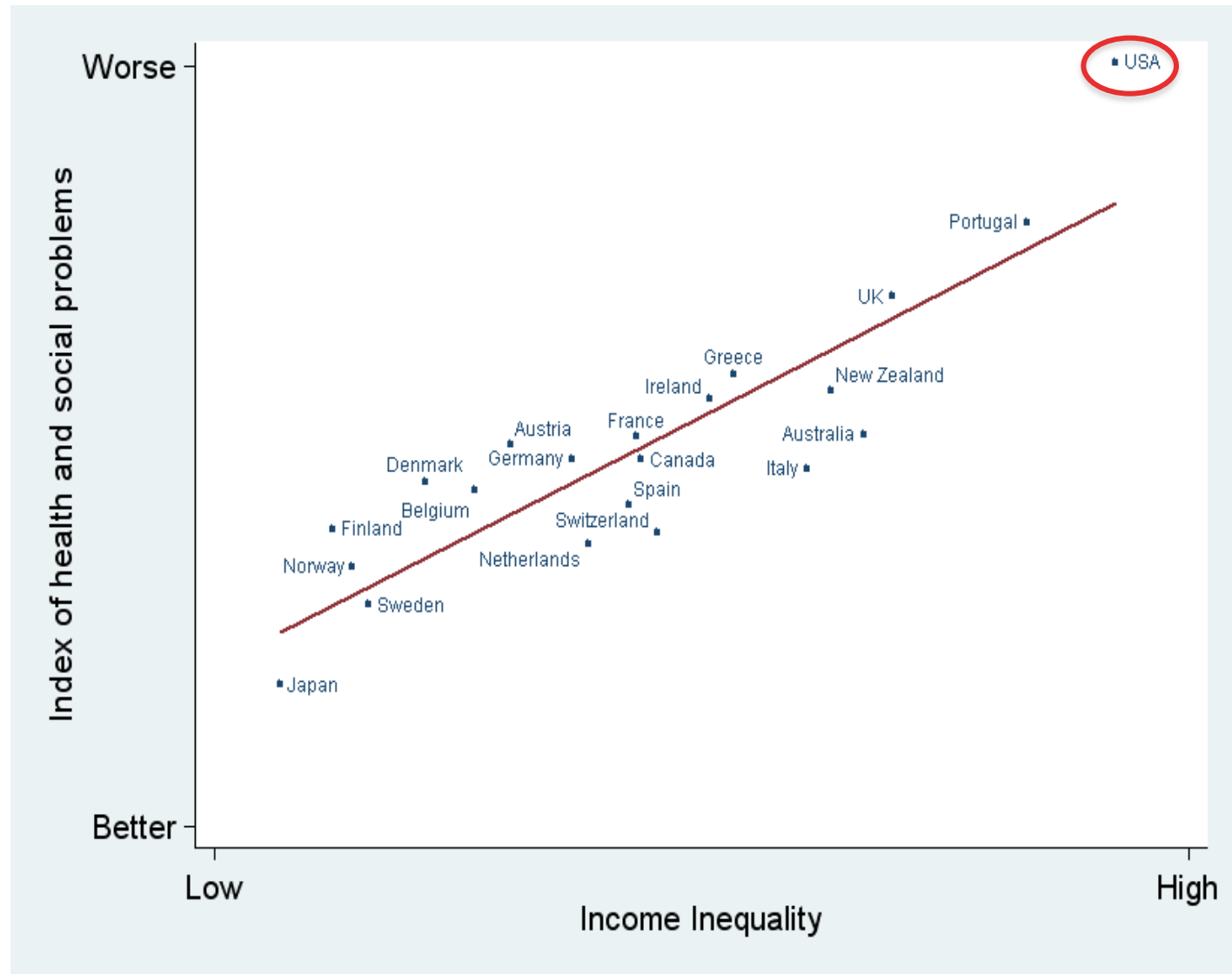
RICHARD WILKINSON and KATE PICKETT

Foreword by Robert B. Reich

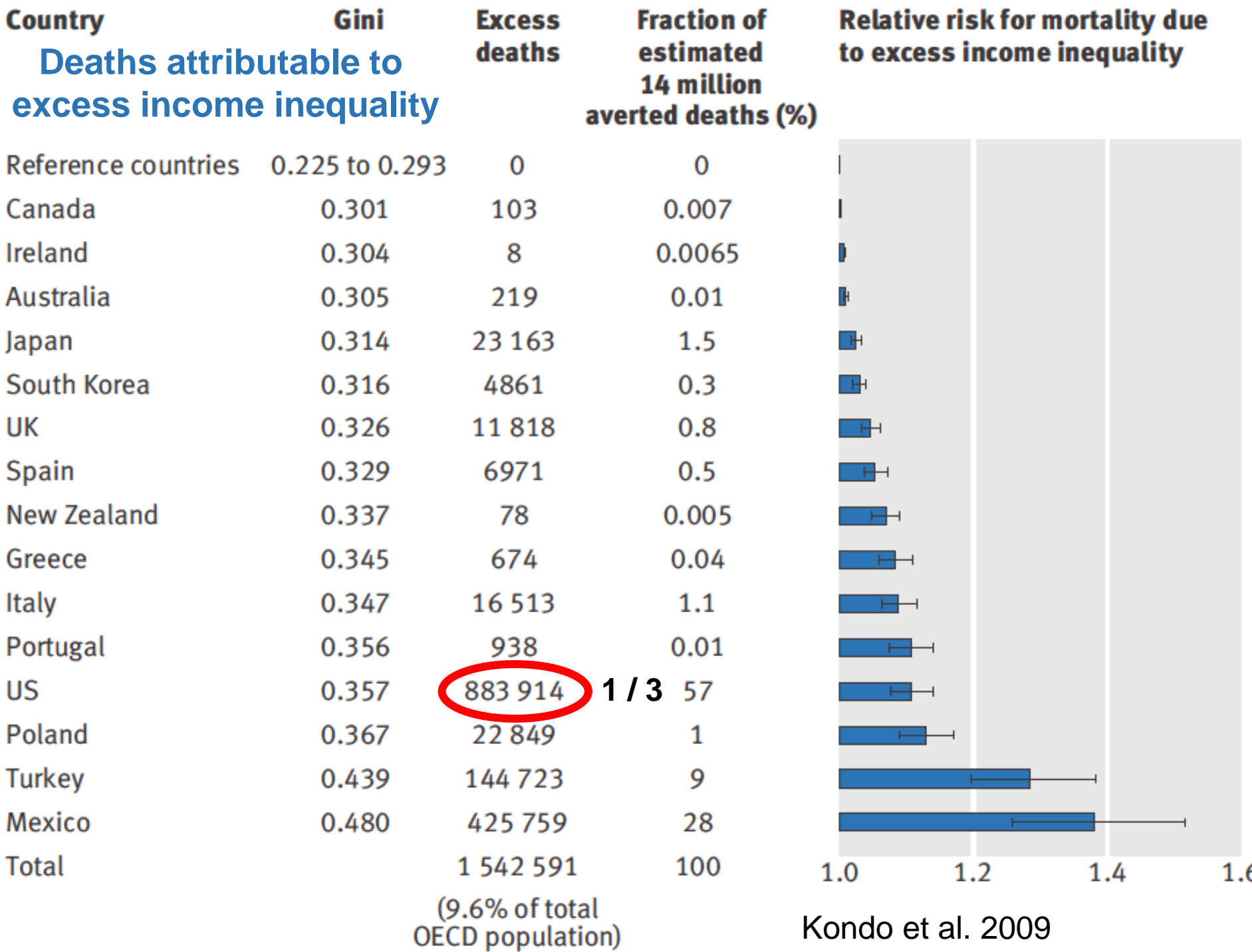
Health and Social Problems are Worse in More Unequal Countries

Index of:

- Life expectancy
- Math & Literacy
- Infant mortality
- Homicides
- Imprisonment
- Teenage births
- Trust
- Obesity
- Mental illness – incl. drug & alcohol addiction
- Social mobility



People who create
INEQUALITY
KILL



West Virginia SURVEILLANCE

West Virginia Health Outcomes & Inequality



West Virginia State Outcomes Better Compared to other states

Homicide

Incarceration

Teenage births

West Virginia State Outcomes Poor Compared to other states

Obesity

Child obesity

Child conflict

Doing better in a fist fight

High school drop outs

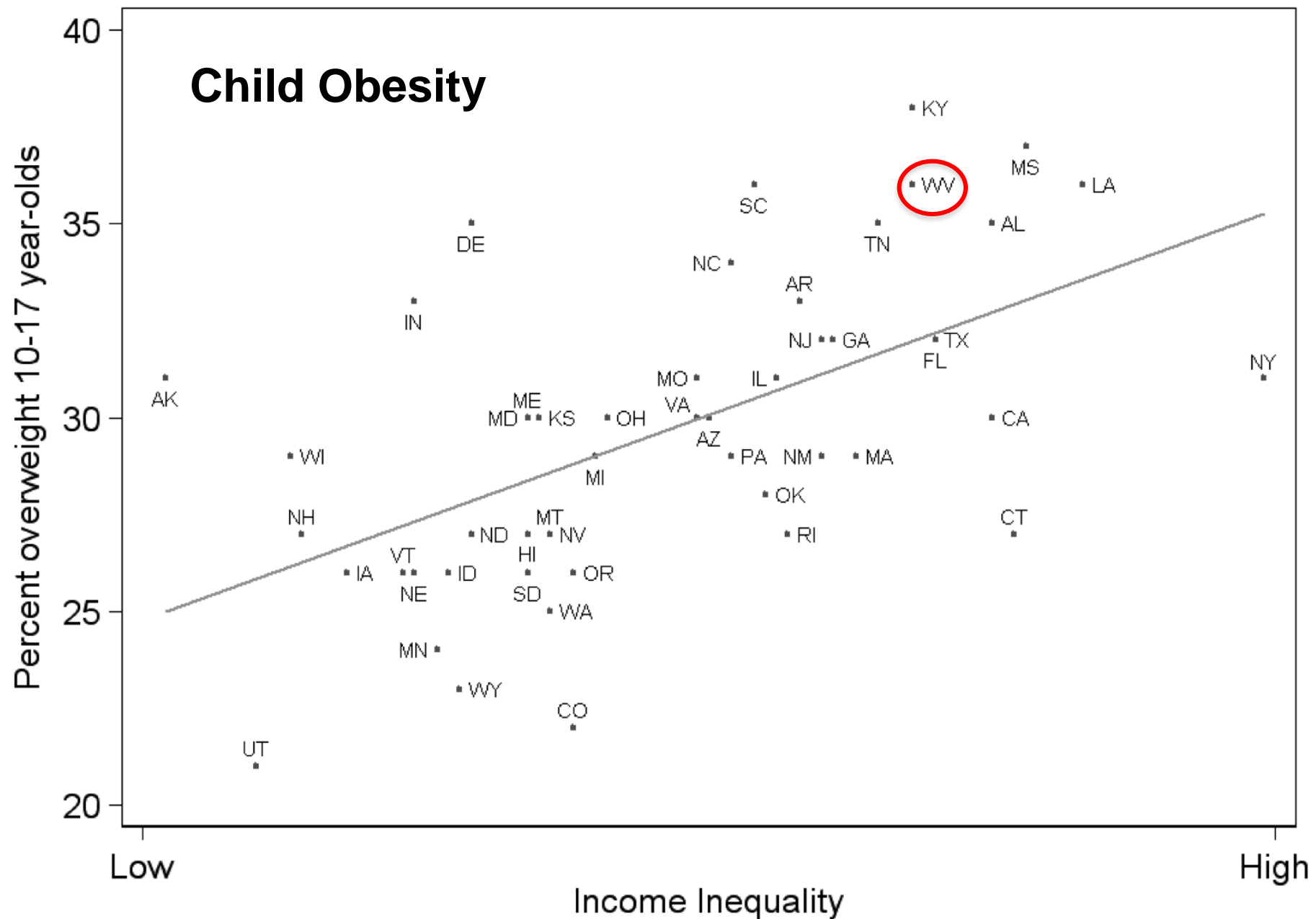
Mathematics & literacy scores age 15

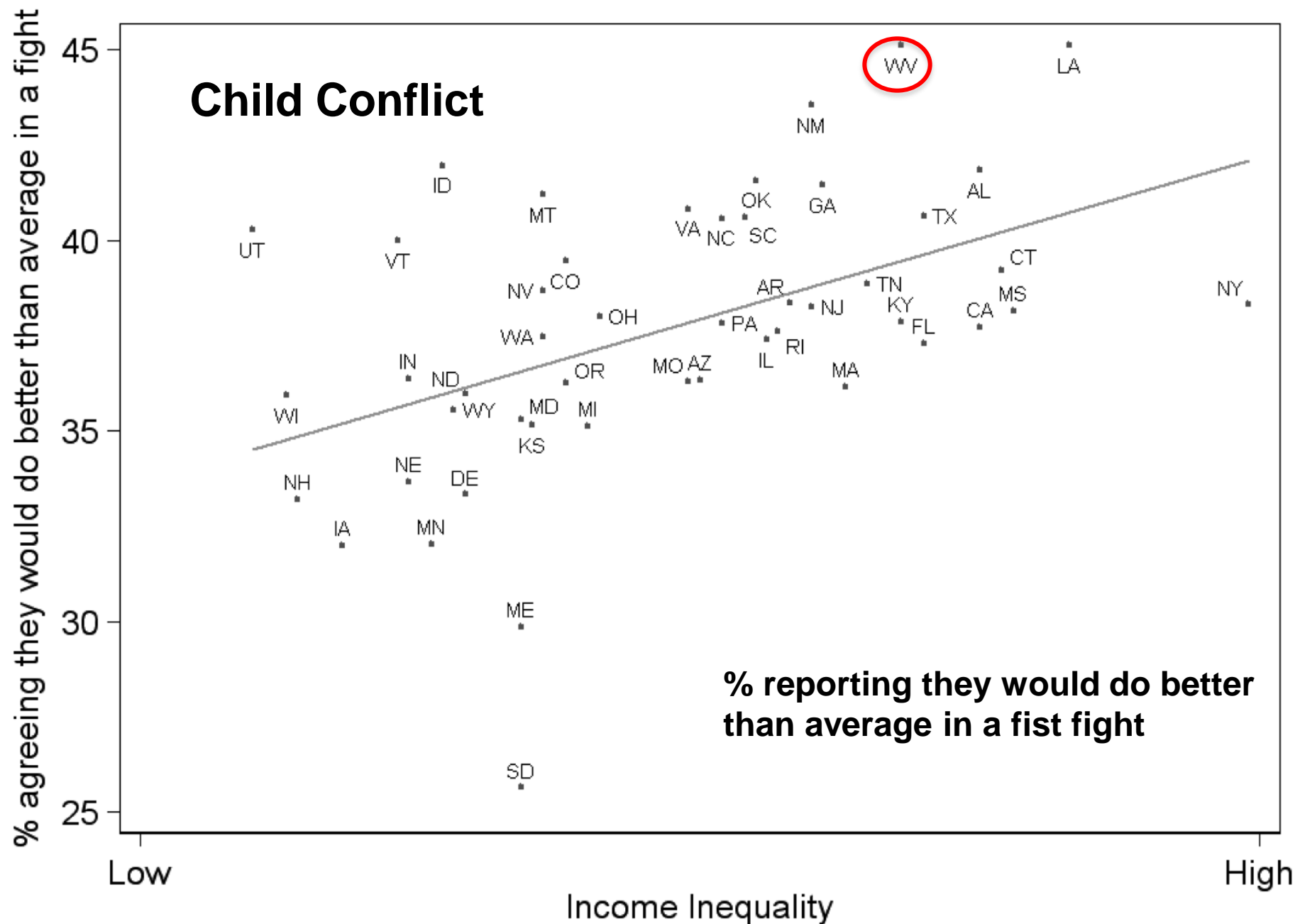
Trust

Women's status

Life expectancy

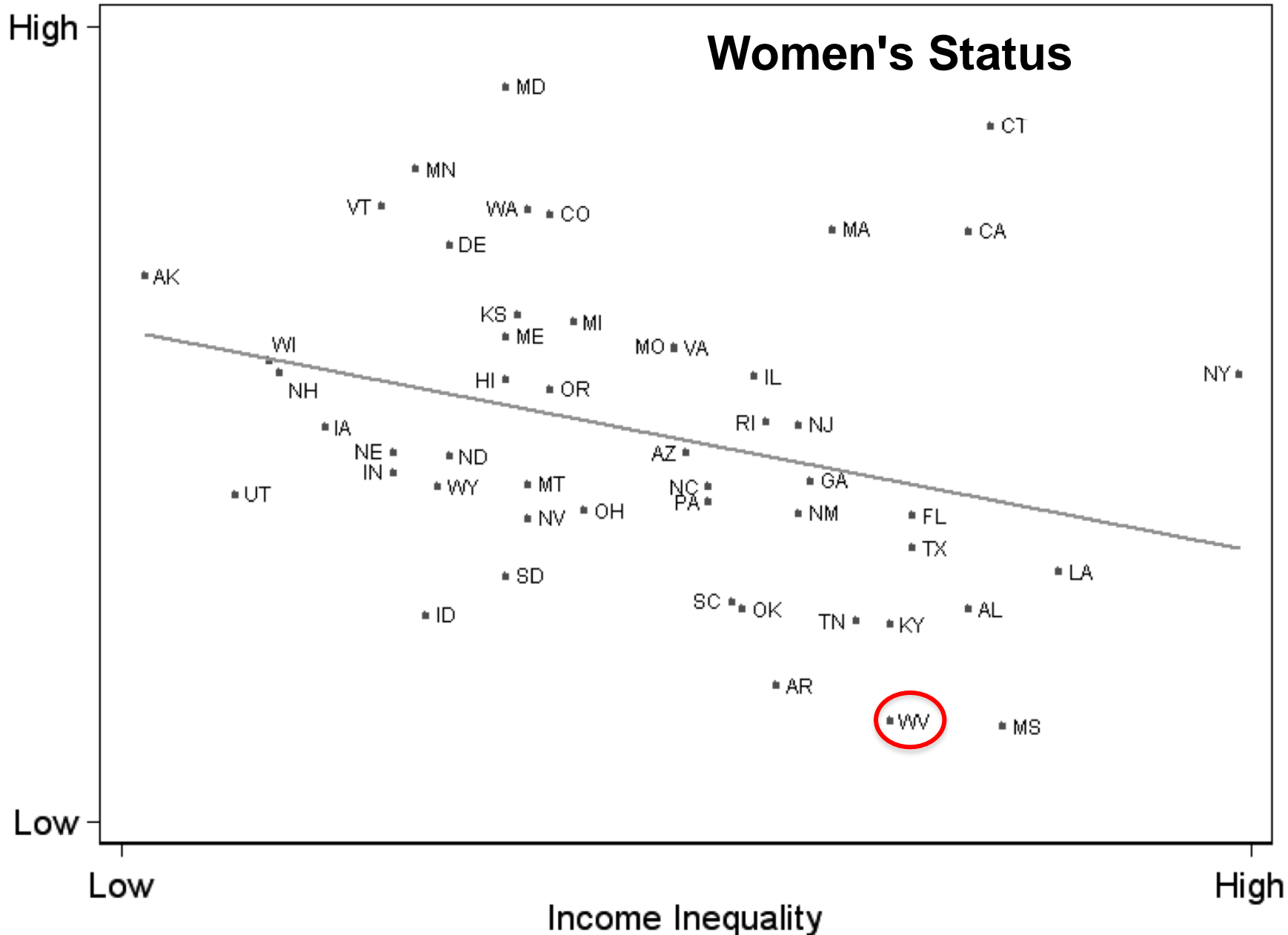
Infant Mortality

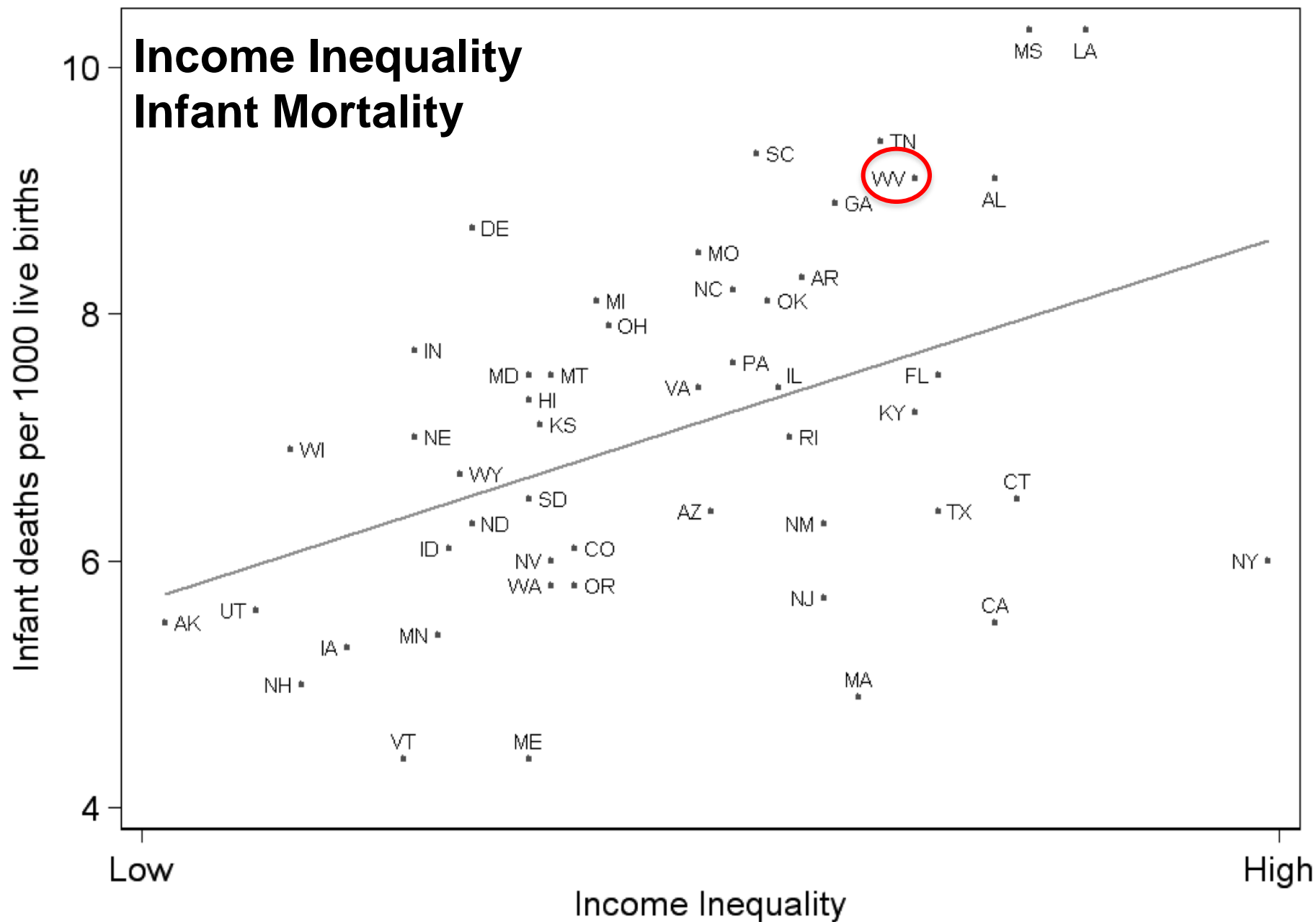




Index of women's status

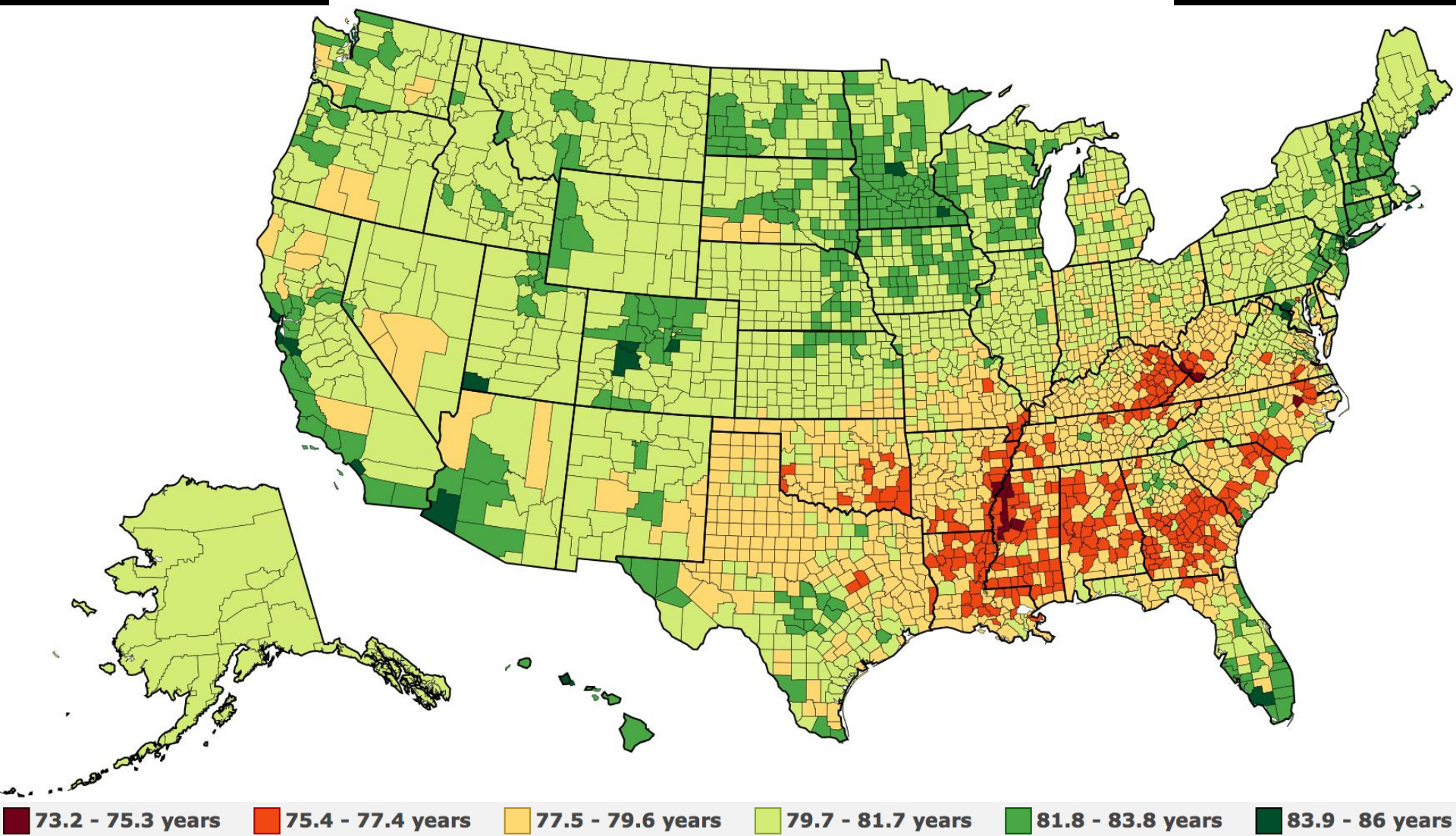
Women's Status



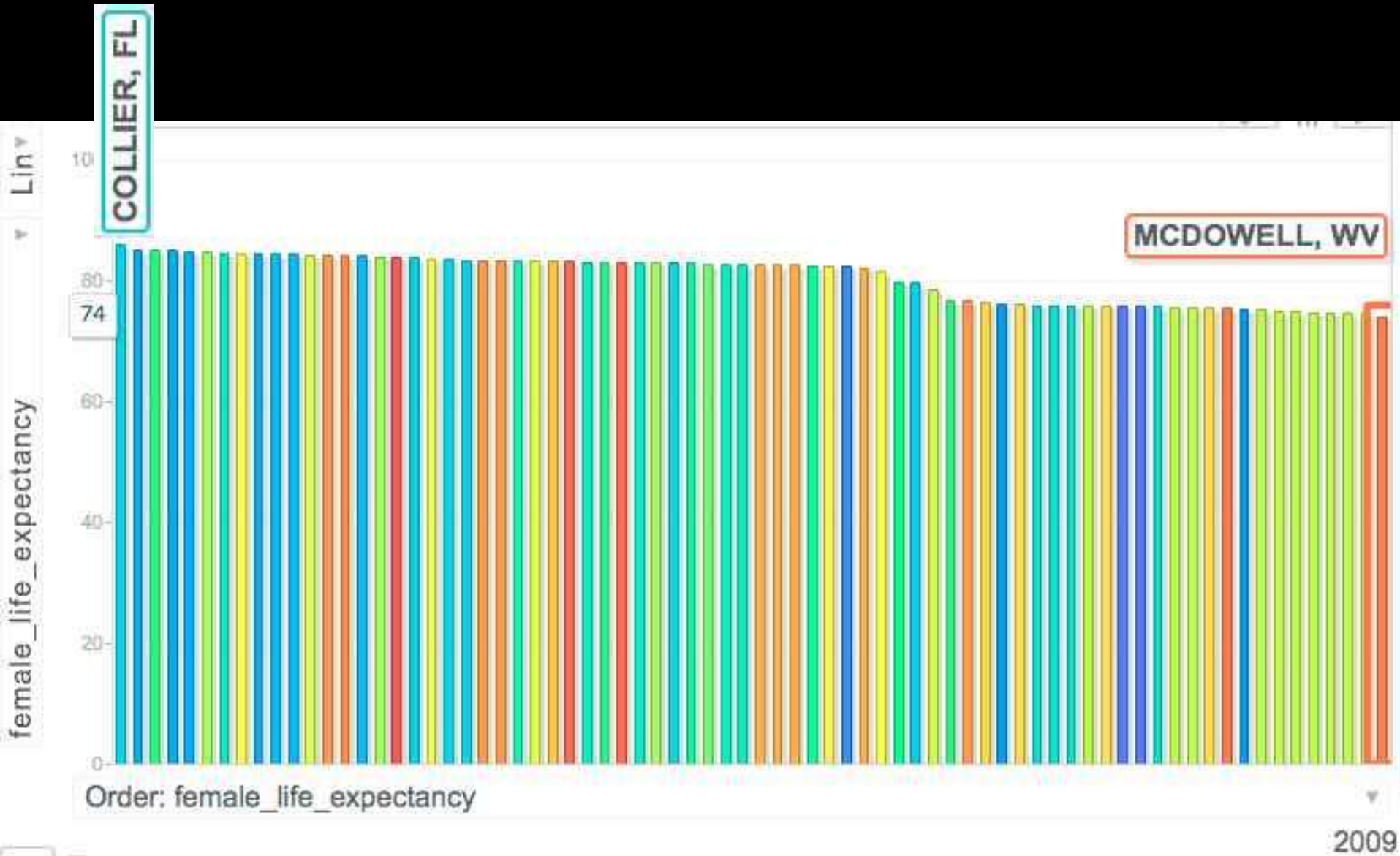


WHERE IS OUR HEALTH

County Female Life Expectancy 2009



HIGH low US County Female Life Expectancy 2009

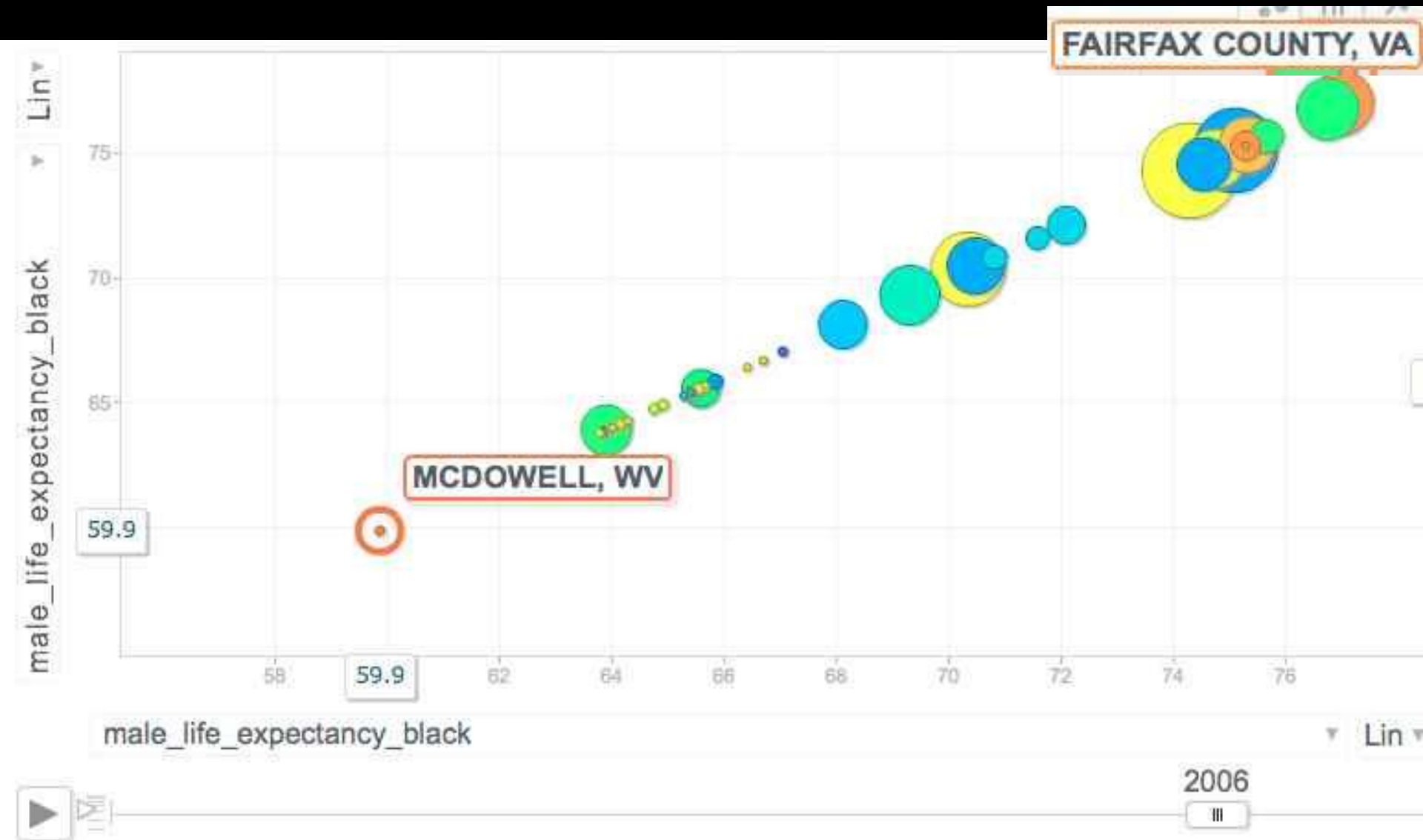


McDowell WV County Male Life Expectancy

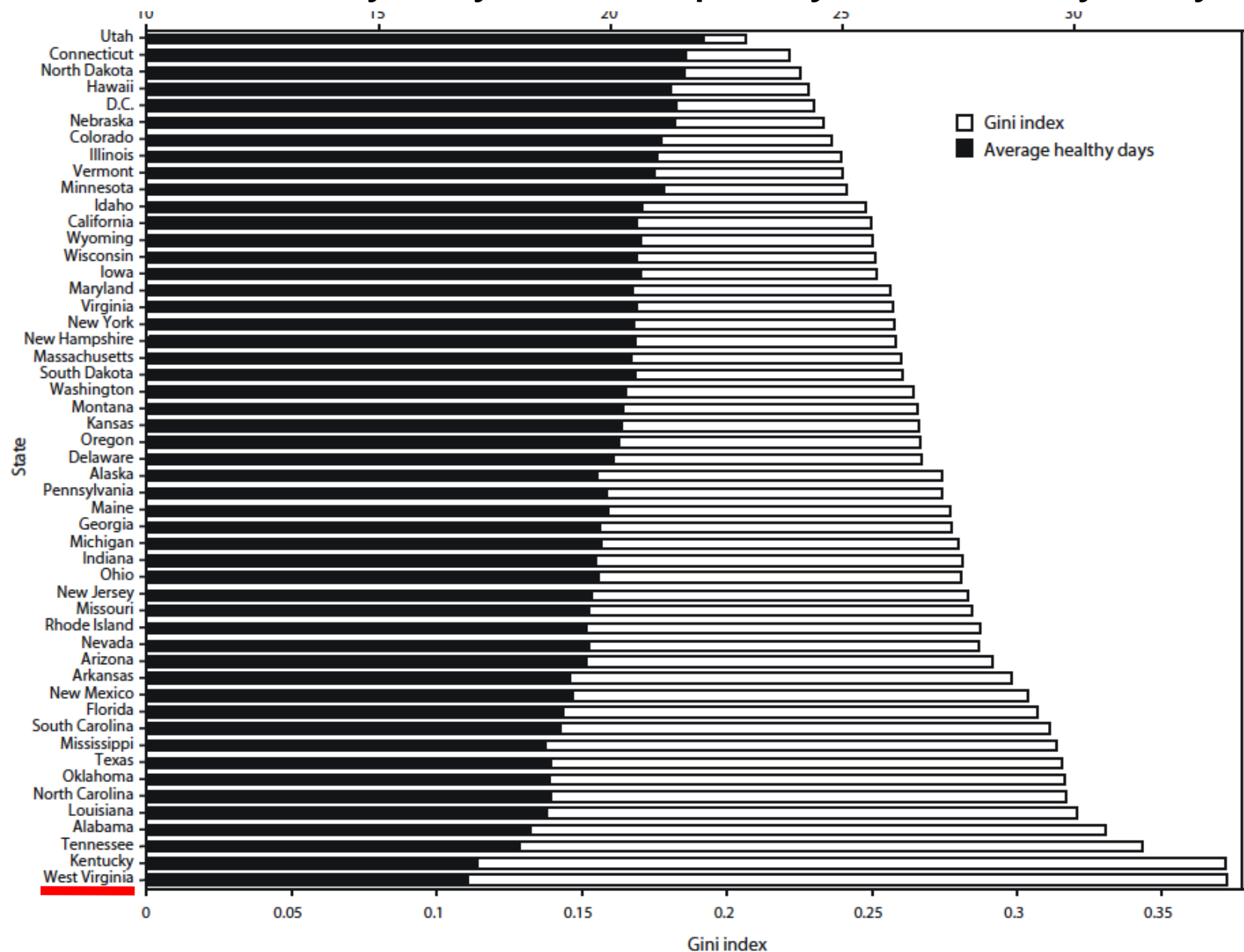
Male Life Expectancy, 2007



HIGH low US Black Male Life Expectancy 2006



Mean # Healthy days & Inequality of Healthy Days



Source: Gini index and mean of number of healthy days was estimated by using data retrieved from the Behavioral Risk Factor Surveillance System, 2007. Available at <http://www.cdc.gov/BRFSS>.

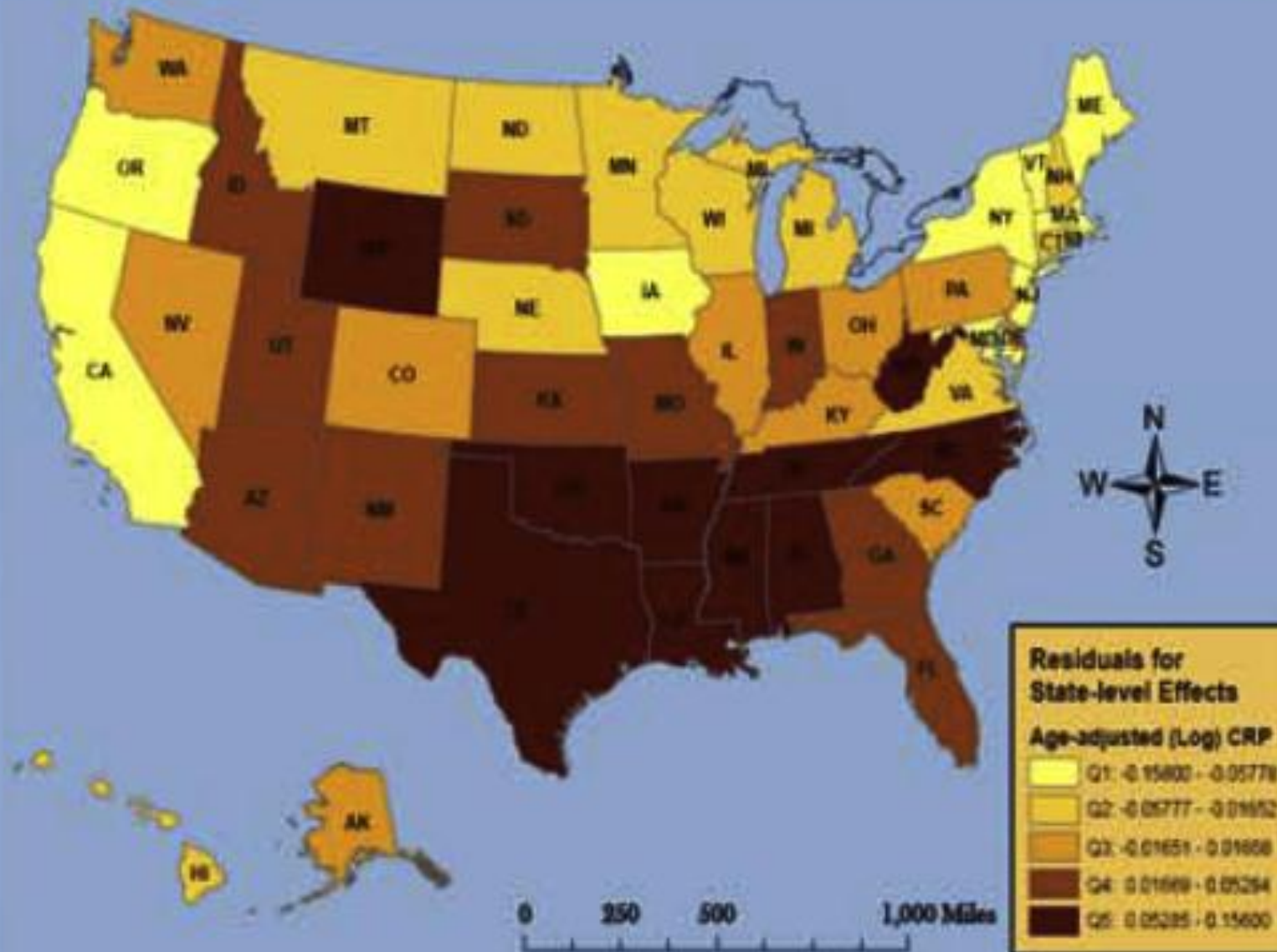
**Mechanisms
through which
inequality impacts health**

Stress

Inflammation

Age-adjusted CRP

THE WOMEN'S HEALTH STUDY: AGE-ADJUSTED CRP



Early life lasts a lifetime

Womb to Tomb

First 1000 days

9 months

– maternal grandmother

First two years outside

HALF of adult health programmed

Disease

**relative poverty
in early life**

PUBLIC HEALTH

Assessment

Policy Development

Assurance

RESPONSE



"WE HAVE GOOD NEWS AND BAD NEWS. THE GOOD NEWS IS WE'VE DEVELOPED A CREDIBLE SPIN FOR THE BAD NEWS..."

What to do?

Inform the public

Make comparisons with healthier nations

Level the playing field

Support early life



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Population Health

What Determines Health?

Key Determinants

Income and Social Status

Social Support Networks

Education and Literacy

Employment/Working Conditions

Social Environments

Physical Environments

Personal Health Practices and Coping Skills

Healthy Child Development

Biology and Genetic Endowment

Health Services

Gender

Culture

- [The Approach](#)
- [Determinants](#)
 - [World Conference on Social Determinants of Health](#)
- [Collaboration](#)
- [Implementation](#)



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+/- TEXT PRINT SHARE

What Makes Canadians Healthy or Unhealthy?

The National Health Forum

[What Makes Canadians Healthy or Unhealthy?](#)
[Underlying Premises and Evidence Table](#)

This deceptively simple story speaks to the complex set of factors or conditions that determine the level of health of every Canadian.

"Why is Jason in the hospital?

Because he has a bad infection in his leg.

But why does he have an infection?

Because he has a cut on his leg and it got infected.

But why does he have a cut on his leg?

Because he was playing in the junk yard next to his apartment building and there was some sharp, jagged steel there that he fell on.

But why was he playing in a junk yard?

Because his neighborhood is kind of run down. A lot of kids play there and there is no one to supervise them.

But why does he live in that neighborhood?

Because his parents can't afford a nicer place to live.

But why can't his parents afford a nicer place to live?

Because his Dad is unemployed and his Mom is sick.

But why is his Dad unemployed?

Because he doesn't have much education and he can't find a job.

But why ...?"

- from [Toward a Healthy Future: Second Report on the Health of Canadians](#)

**Do we want health or
health care?**



MAKING AMERICANS HEALTHIER

Social and Economic Policy as Health Policy

Robert F. Schoeni, James S. House,
George A. Kaplan, and Harold Pollack, editors

"As dramatic and consequential as medical care is for individual cases and for specific conditions, much evidence suggests that such care is not and probably never has been the major determinant of levels or changes in population health." Pg 4.



SUMMARY

AT BEST our health in USA that of middle-income country

All of us die younger than we should

History of political choices regarding sharing societal resources PRIME REASON

Early life is critical for adult health

Need set health goals for nation

US states and local jurisdictions need inform

National response is required

Stephen Bezruchka
sabez@uw.edu

Resources: readings

<http://depts.washington.edu/eqhlth/pages/resources.html>

PRIMAL PREVENTION

RESPONSE

PRIMAL PREVENTION

What to do?

Inform the public

Make comparisons with healthier nations

– How many of you do this to policy makers now?

Level the playing field

Support early life

What to do?

Inform the public

Make comparisons with healthier nations

Level the playing field

Support early life

GOOD NEWS BAD NEWS



Teff Mack

Leveling playing field

INCREASE GOVERNMENT REVENUE

Corporate: Individual **Taxes**

\$1.50: \$1 1950s,

\$0.25: \$1 now

Individual taxes (1950s 91% marginal rate)

Raise cap on social security

Tax other forms of property (stocks, bonds, savings)

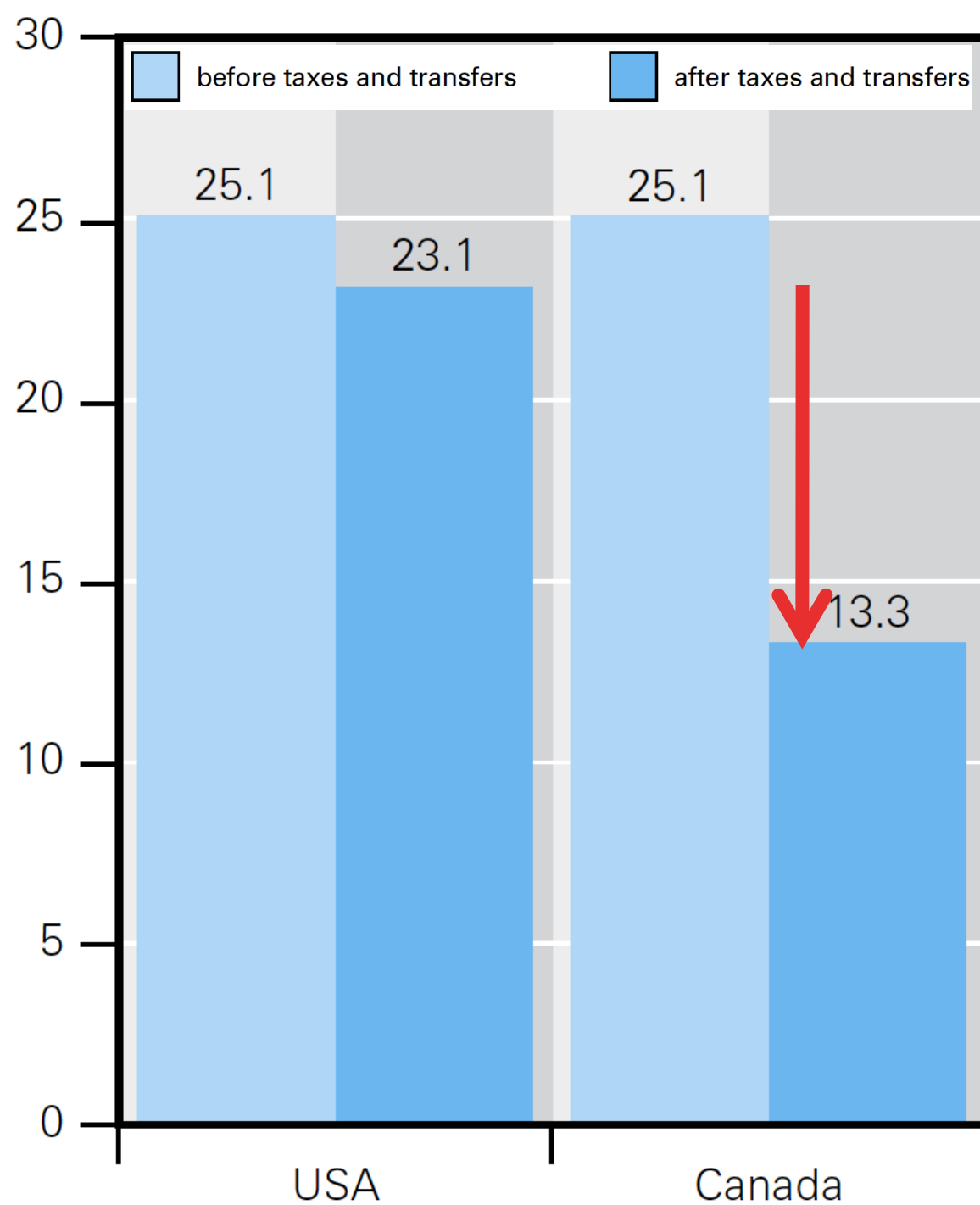
Structural Medicine



Leveling playing field

SOCIAL SPENDING

Early life focus



Child Poverty Before and after taxes/transfers USA Canada

UNICEF
Innocenti Research Centre
Report Card 10

Measuring child poverty

New league tables of child poverty
in the world's rich countries

What to do?

Inform the public

Make comparisons with healthier nations

Level the playing field

Support early life

- Antenatal, maternal leave

MAPPING PAID MATERNITY LEAVE:

HOW MANY WEEKS DO OTHER NATIONS
PROVIDE COMPARED TO THE US?

SOURCE: NATIONMASTER.COM

**THINK
PROGRESS**



Realistic issues

Collect

Analyze

- data on various health, ses & social measures
- Health disparities (Health INEQUALITIES)

Report comparing other areas, countries

Highlight socioeconomic gradient

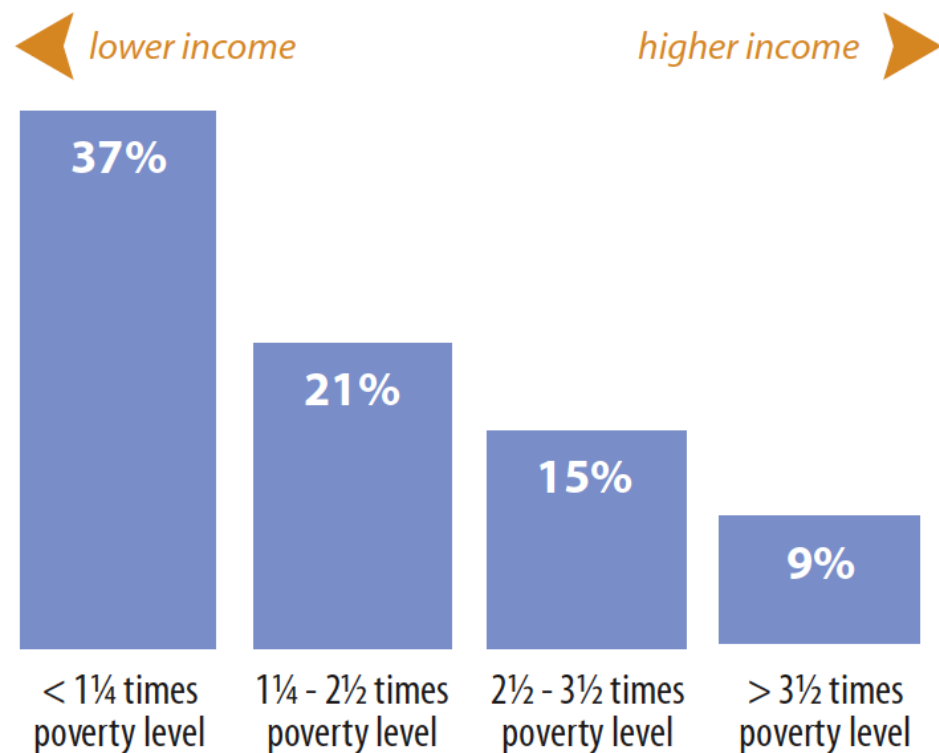
- **Focus on income-health**

Not income inequality – poor health

The Health Disparities of Vermonters • 2010

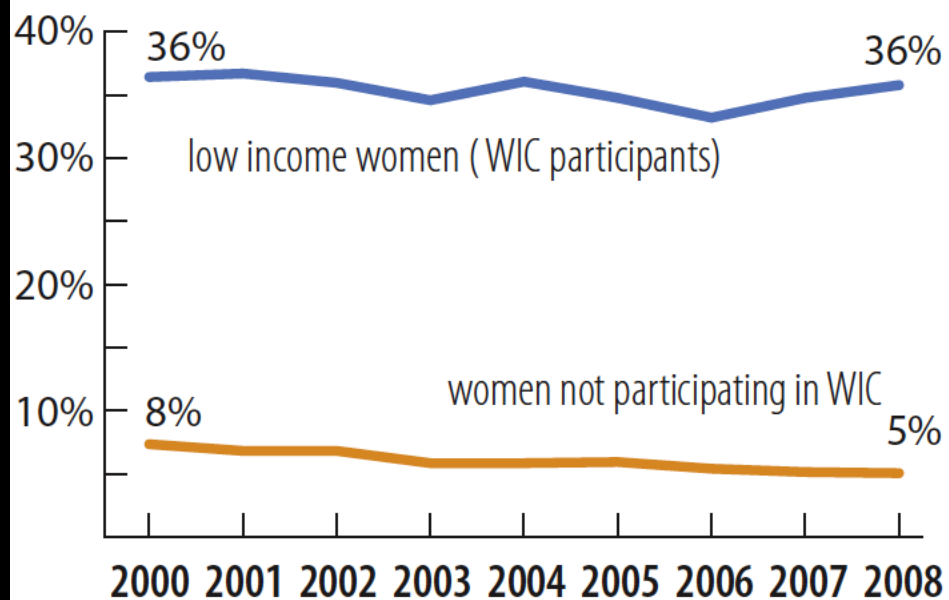
Smoking & Income

% of Vermont adult smokers, by Federal Poverty Level • 2008



Smoking during Pregnancy

% pregnant Vermonters who smoked during pregnancy





ODDS AGAINST TOMORROW

HEALTH INEQUITIES in SPOKANE COUNTY



EDUCATION



HOUSEHOLD INCOME



RACE/ETHNICITY



PLACE/NEIGHBORHOOD

ODDS AGAINST TOMORROW

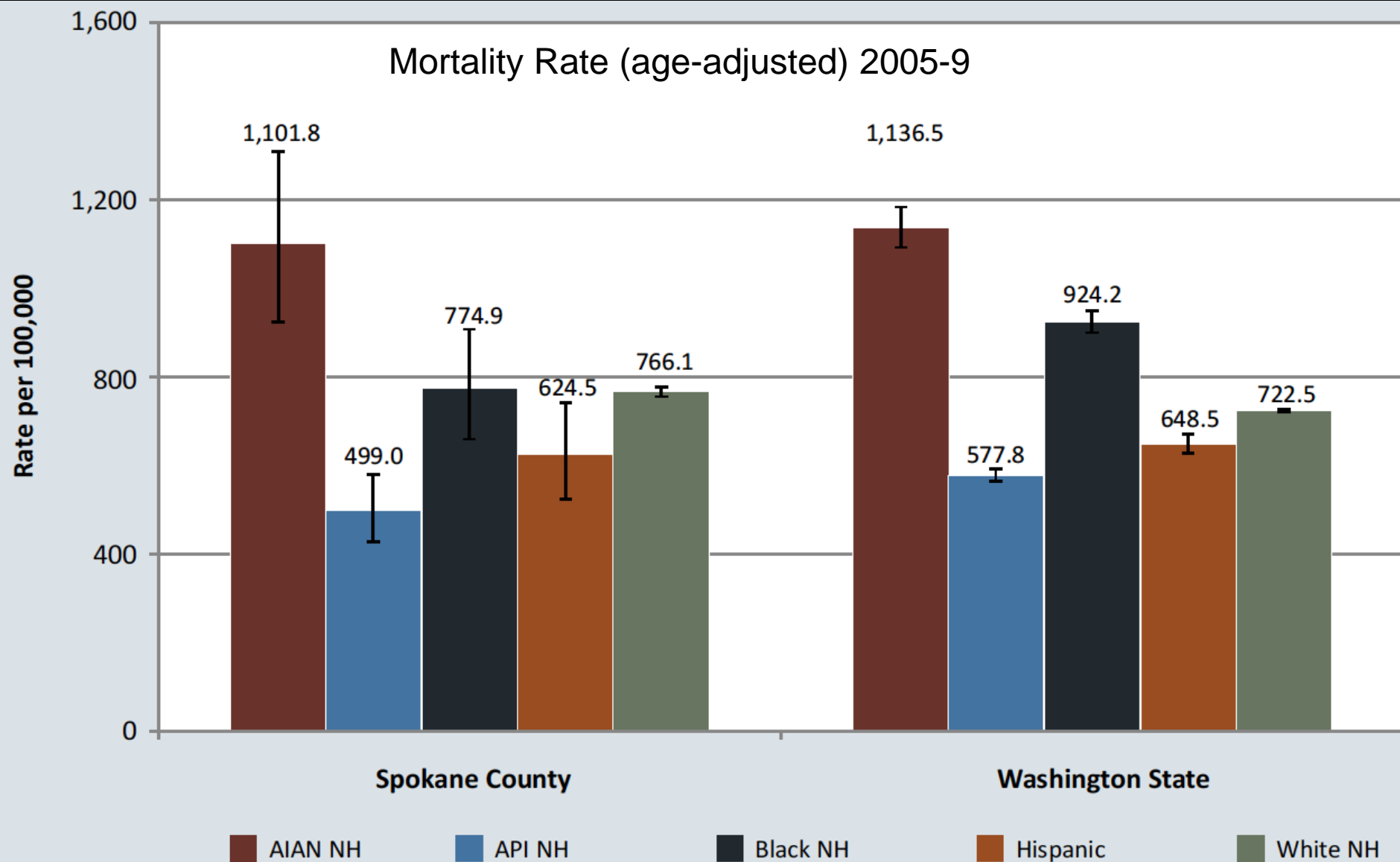
HEALTH INEQUITIES in SPOKANE COUNTY

*Life isn't just
better at the top,
it's longer and healthier.*

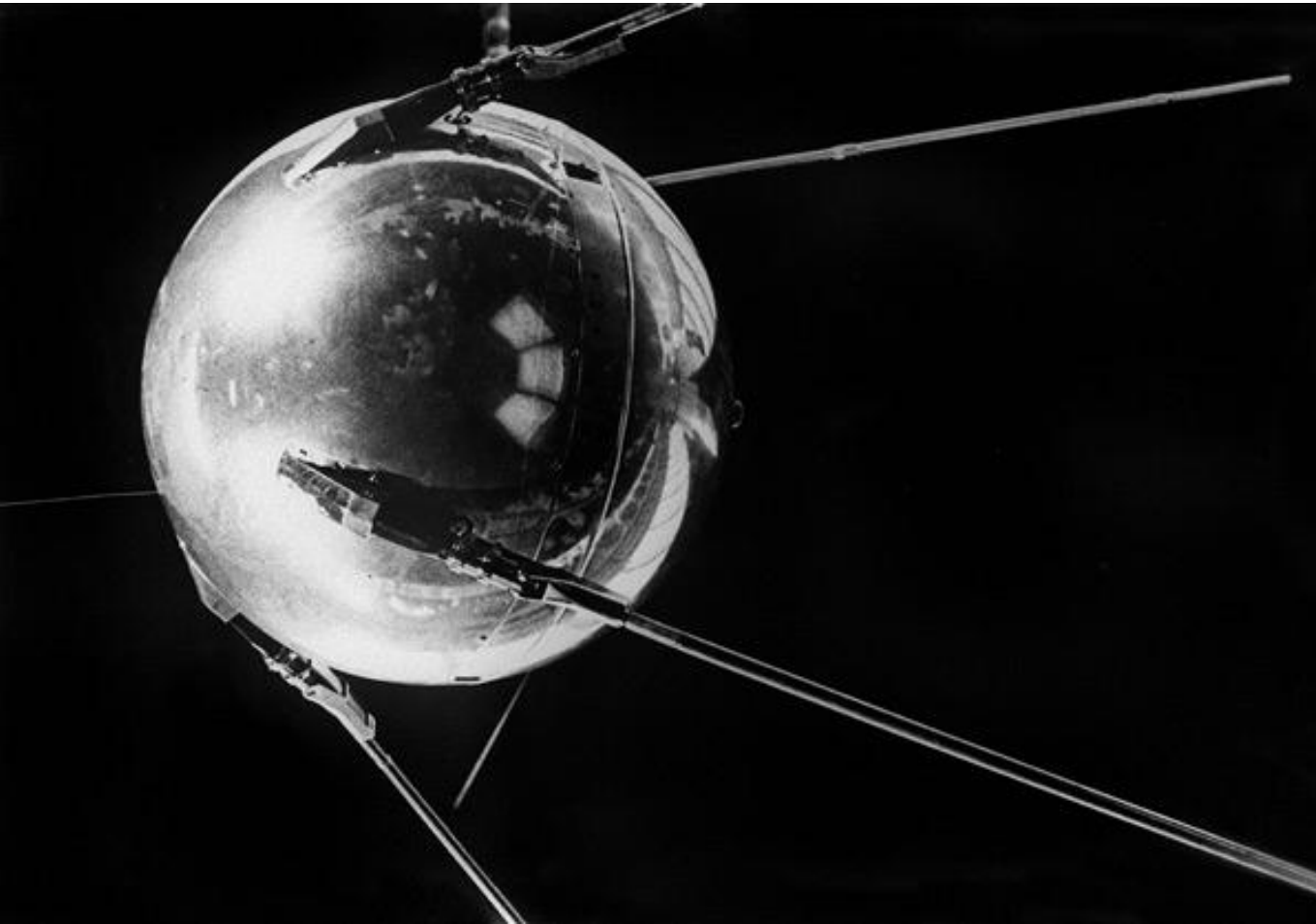
Letter from Dr. Joel McCullough, Health Officer

ODDS AGAINST TOMORROW

HEALTH INEQUITIES in SPOKANE COUNTY



"This is our generation's Sputnik moment,"



**State of the Union
Jan 25, 2011**

SPUTNIK MOMENT

State
or
County Level
Interventions

A Call to Action for Individuals & Their Communities



WEST VIRGINIA

WEST VIRGINIA

Ranking: West Virginia is 41st this year; it was 43rd in 2010.

Highlights:

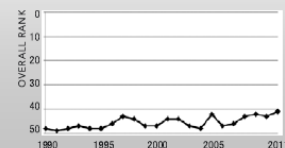
- In the past year, the rate of preventable hospitalizations decreased from 105.4 to 100.7 discharges per 1,000 Medicare enrollees.
- Unlike other states, smoking has not declined in the last ten years; 393,000 adults still smoke in West Virginia.
- In the past ten years, obesity increased from 23.2 percent to 32.9 percent of adults, with 482,000 obese adults in the state.
- In the past ten years, diabetes increased from 7.6 percent to 11.7 percent of the population. Now 171,000 West Virginia adults have diabetes.

Health Disparities:

In West Virginia, obesity is more prevalent among non-Hispanic blacks at 39.5 percent than non-Hispanic whites at 32.1 percent and Hispanics at 29.7 percent. Diabetes also varies by race and ethnicity in the state; 15.2 percent of non-Hispanic blacks have diabetes compared to 11.8 percent of non-Hispanic whites and 11.7 percent of Hispanics.

State Health Department Web Site: www.wvdhhr.org

Overall Rank: 41



Change: ▲ 2

Determinants Rank: 34

Outcomes Rank: 47

Strengths:

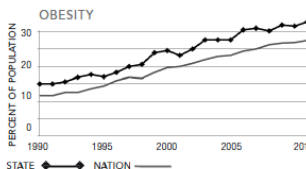
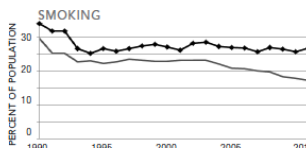
- Low prevalence of binge drinking
- High per capita public health funding
- Low incidence of infectious disease

Challenges:

- High prevalences of smoking, obesity and diabetes
- High rate of preventable hospitalizations
- Many poor mental and physical health days per month

| ECONOMIC ENVIRONMENT | WV | U.S. |
|--------------------------------|----------|----------|
| Unemployment Rate (Aug 2011) | 8.1% | 8.3% |
| Underemployment Rate (2010) | 14.0% | 16.7% |
| Median Household Income (2010) | \$42,839 | \$49,445 |

| MEASURE | 2001 | ADULT POPULATION AFFECTED 2011 | 10-YR CHANGE |
|----------|---------|--------------------------------|--------------|
| Smoking | 367,000 | 393,000 | 26,000 |
| Obesity | 326,000 | 482,000 | 156,000 |
| Diabetes | 107,000 | 171,000 | 64,000 |



For a more detailed look
at this data, visit
www.americashealthrankings.org/WV

| DETERMINANTS | 2011 | | NO. 1 STATE |
|--|-------|------|-------------|
| | VALUE | RANK | |
| BEHAVIORS | | | |
| Smoking (Percent of adult population) | 26.8 | 50 | 9.1 |
| Binge Drinking (Percent of adult population) | 9.1 | 3 | 6.7 |
| Obesity (Percent of adult population) | 32.9 | 48 | 21.4 |
| High School Graduation (Percent of incoming ninth graders) | 77.3 | 22 | 89.6 |
| COMMUNITY & ENVIRONMENT | | | |
| Violent Crime (Offenses per 100,000 population) | 315 | 24 | 122 |
| Occupational Fatalities (Deaths per 100,000 workers) | 7.7 | 45 | 2.5 |
| Infectious Disease (Cases per 100,000 population) | 2.3 | 1 | 2.3 |
| Children in Poverty (Percent of persons under age 18) | 20.3 | 25 | 6.2 |
| Air Pollution (Micrograms of fine particles per cubic meter) | 11.9 | 44 | 5.2 |
| PUBLIC & HEALTH POLICIES | | | |
| Lack of Health Insurance (Percent without health insurance) | 13.6 | 21 | 5.0 |
| Public Health Funding (Dollars per person) | \$144 | 4 | \$244 |
| Immunization Coverage (Percent of children ages 19 to 35 months) | 91.0 | 23 | 96.0 |
| CLINICAL CARE | | | |
| Early Prenatal Care (Percent with visit during first trimester) | 82.0* | 26 | — |
| Primary Care Physicians (Number per 100,000 population) | 107.2 | 32 | 191.9 |
| Preventable Hospitalizations (per 1,000 Medicare enrollees) | 100.7 | 49 | 25.6 |
| ALL DETERMINANTS | -0.16 | 34 | 0.90 |
| OUTCOMES | | | |
| Diabetes (Percent of adult population) | 11.7 | 48 | 5.3 |
| Poor Mental Health Days (Days in previous 30 days) | 4.5 | 50 | 2.3 |
| Poor Physical Health Days (Days in previous 30 days) | 4.9 | 50 | 2.6 |
| Geographic Disparity (Relative standard deviation) | 12.2 | 32 | 4.8 |
| Infant Mortality (Deaths per 1,000 live births) | 7.6 | 37 | 4.7 |
| Cardiovascular Deaths (Deaths per 100,000 population) | 321.2 | 47 | 197.2 |
| Cancer Deaths (Deaths per 100,000 population) | 220.0 | 49 | 137.4 |
| Premature Death (Years lost per 100,000 population) | 9,865 | 45 | 5481 |
| ALL OUTCOMES | -0.25 | 47 | 0.32 |
| OVERALL | -0.41 | 41 | 1.20 |

— indicates data not available. * See measure description for full details.



determinants



Life expectancy
Infant Mortality
Disparities

 BPH Office Locations

Mission

To help shape the environments within which people and communities can be safe and healthy

Values

Healthy people in healthy communities



DHHR > Bureau for Public Health > Search

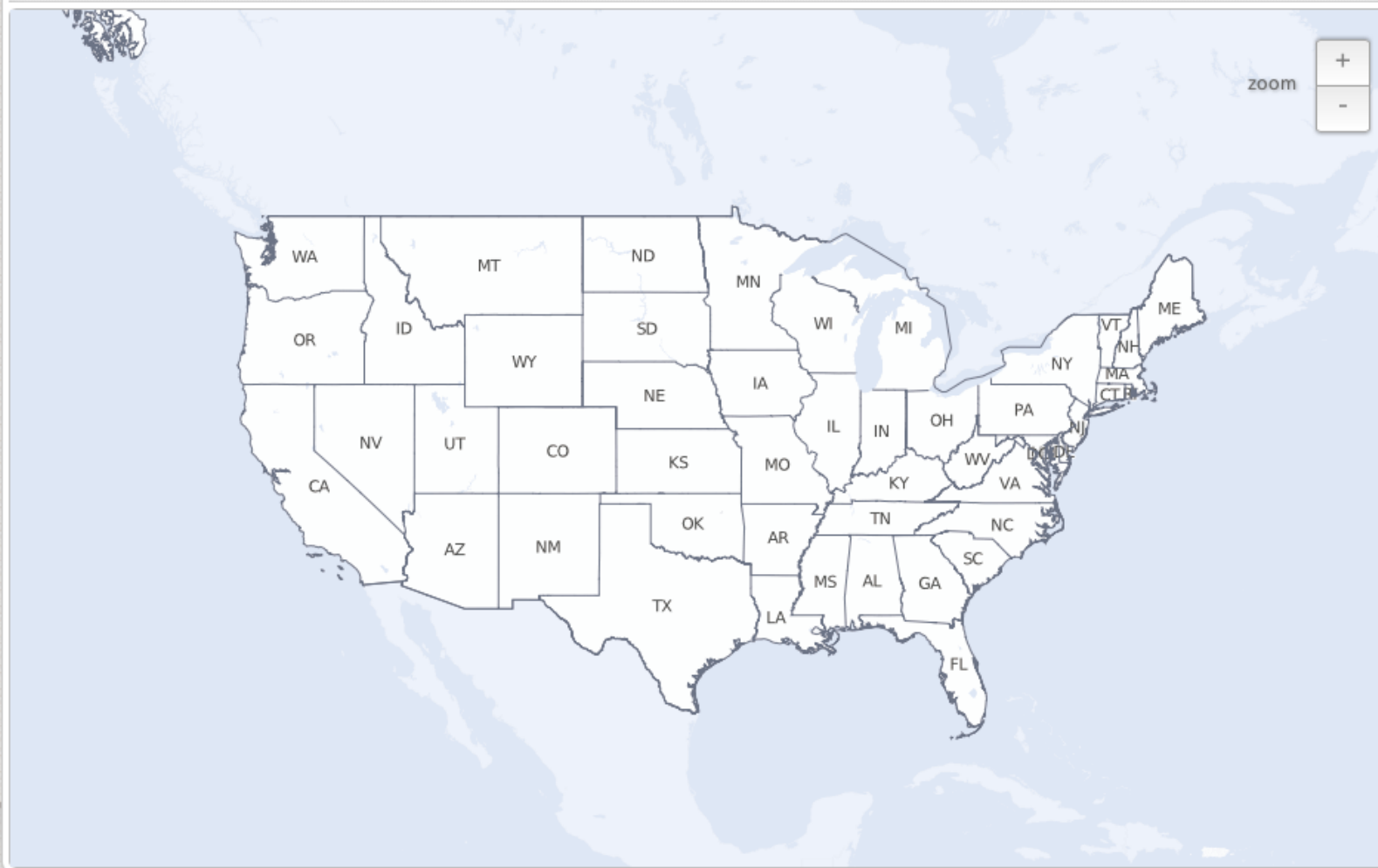
Search

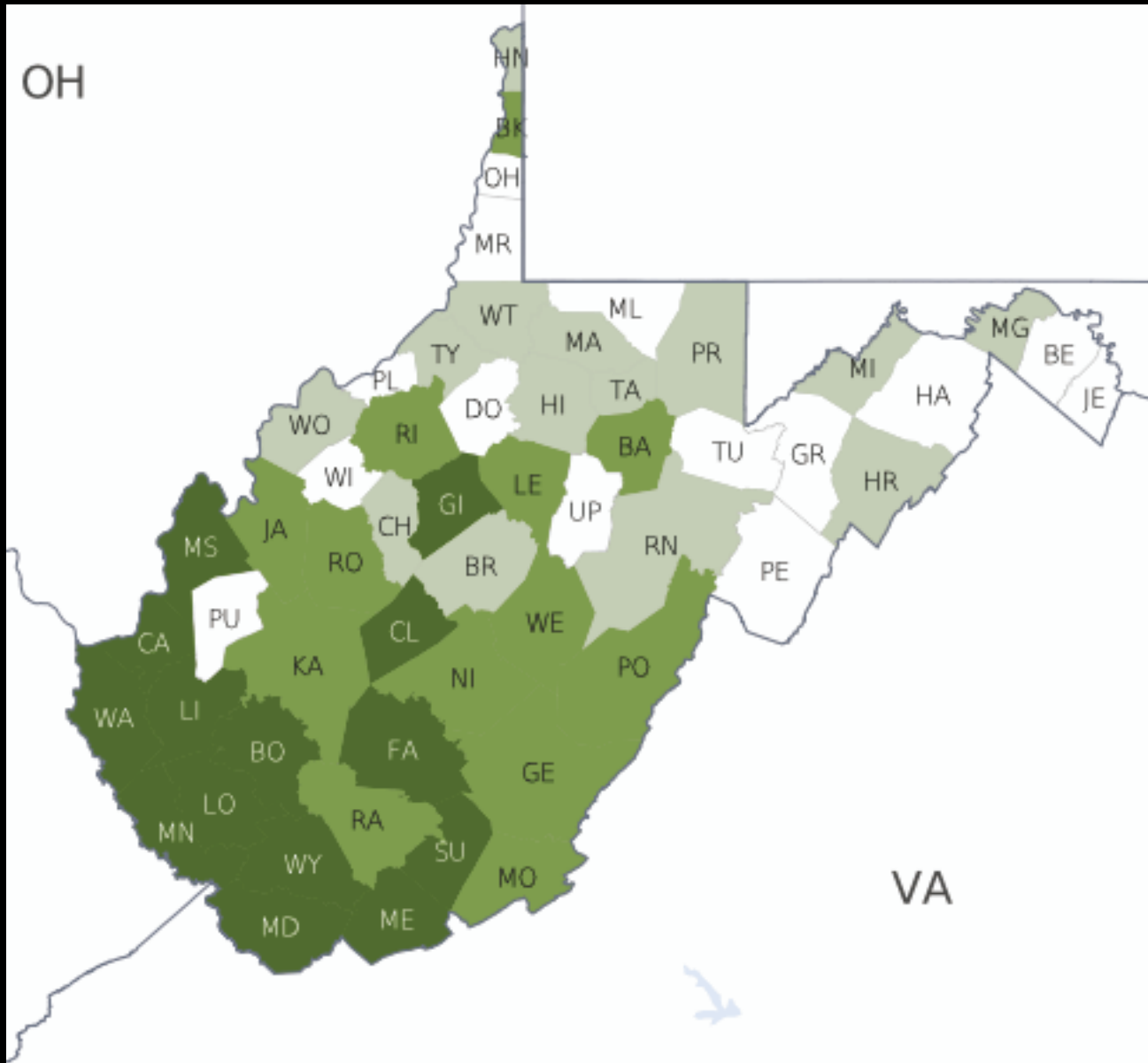
No Results



Select a State to Activate Counties

<http://www.countyhealthrankings.org>






RANK

1 - 14

15 - 28

29 - 41

42 - 55

| | McDowell County | Error Margin | National Benchmark* | West Virginia | Trend | Rank (of 55) |
|---------------------------------|--------------------|-----------------|------------------------|---------------|---|-----------------|
| Health Outcomes | | | | | | 55 |
| MORTALITY | | | | | | 55 |
| Premature death | 18,680 | 16,595-20,765 | 5,466 | 9,587 |  | |
| MORBIDITY | | | | | | 53 |
| Poor or fair health | 35% | 30-41% | 10% | 22% | | |
| Poor physical health days | 7.1 | 6.0-8.2 | 2.6 | 4.9 | | |
| Poor mental health days | 5.6 | 4.5-6.8 | 2.3 | 4.5 | | |
| Low birthweight | 12.5% | 11.1-14.0% | 6.0% | 9.3% | | |
| Health Factors | | | | | | 55 |
| HEALTH BEHAVIORS | | | | | | 51 |
| Adult smoking | 35% | 30-41% | 14% | 26% | | |
| Adult obesity | 33% | 28-38% | 25% | 33% | | |
| Physical inactivity | 44% | 38-50% | 21% | 33% | | |
| Excessive drinking | 7% | 4-12% | 8% | 10% | | |
| Motor vehicle crash death rate | 34 | 25-42 | 12 | 22 | | |
| Sexually transmitted infections | 163 | | 84 | 199 | | |

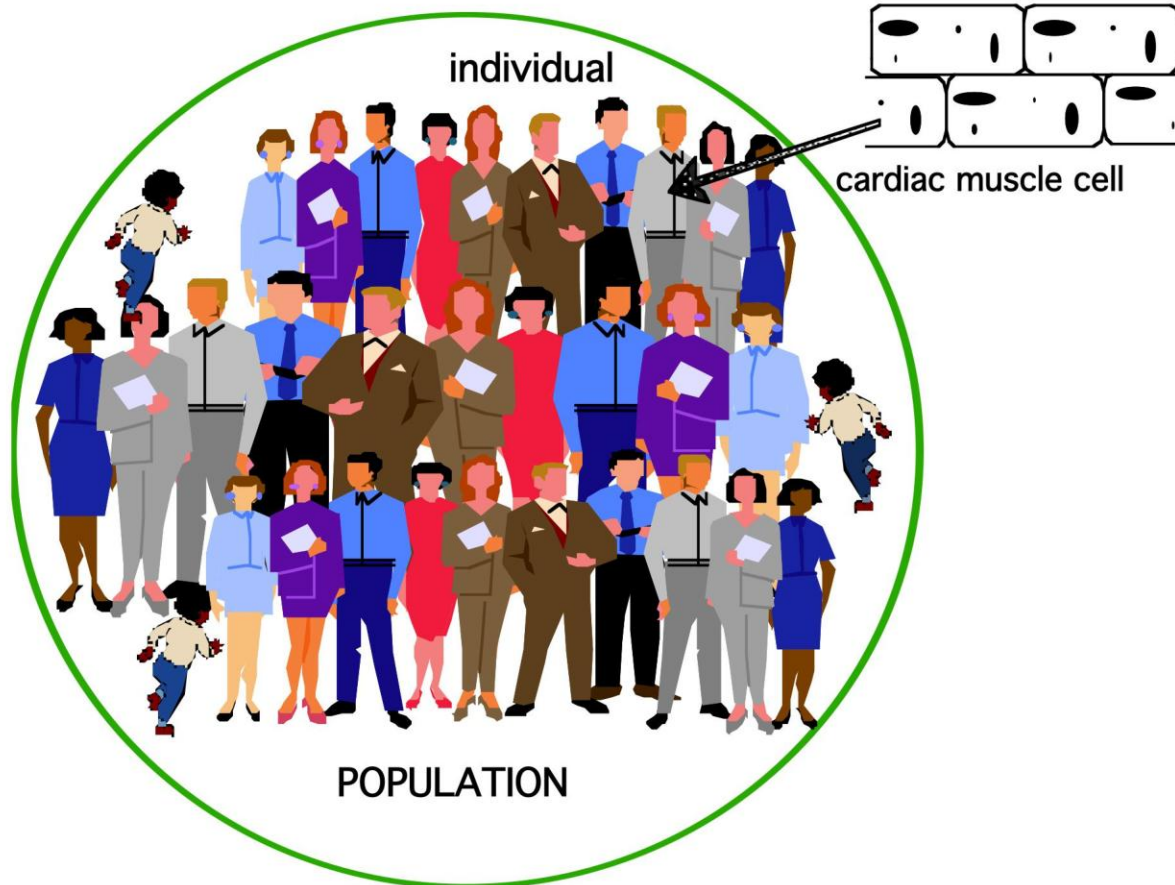
FOCUS?

Disease prevention

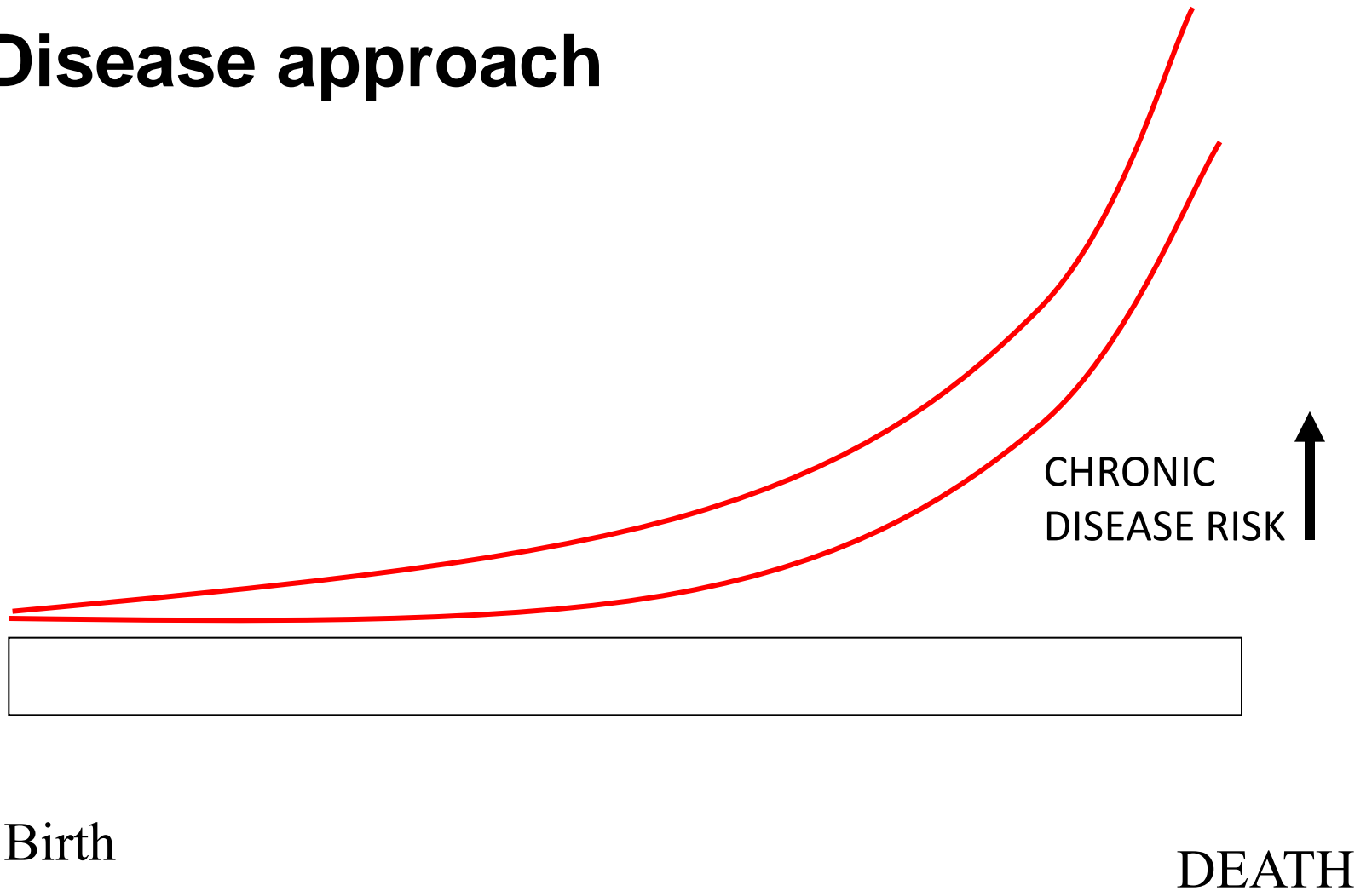
Disease screening & treatment

Behavior Change

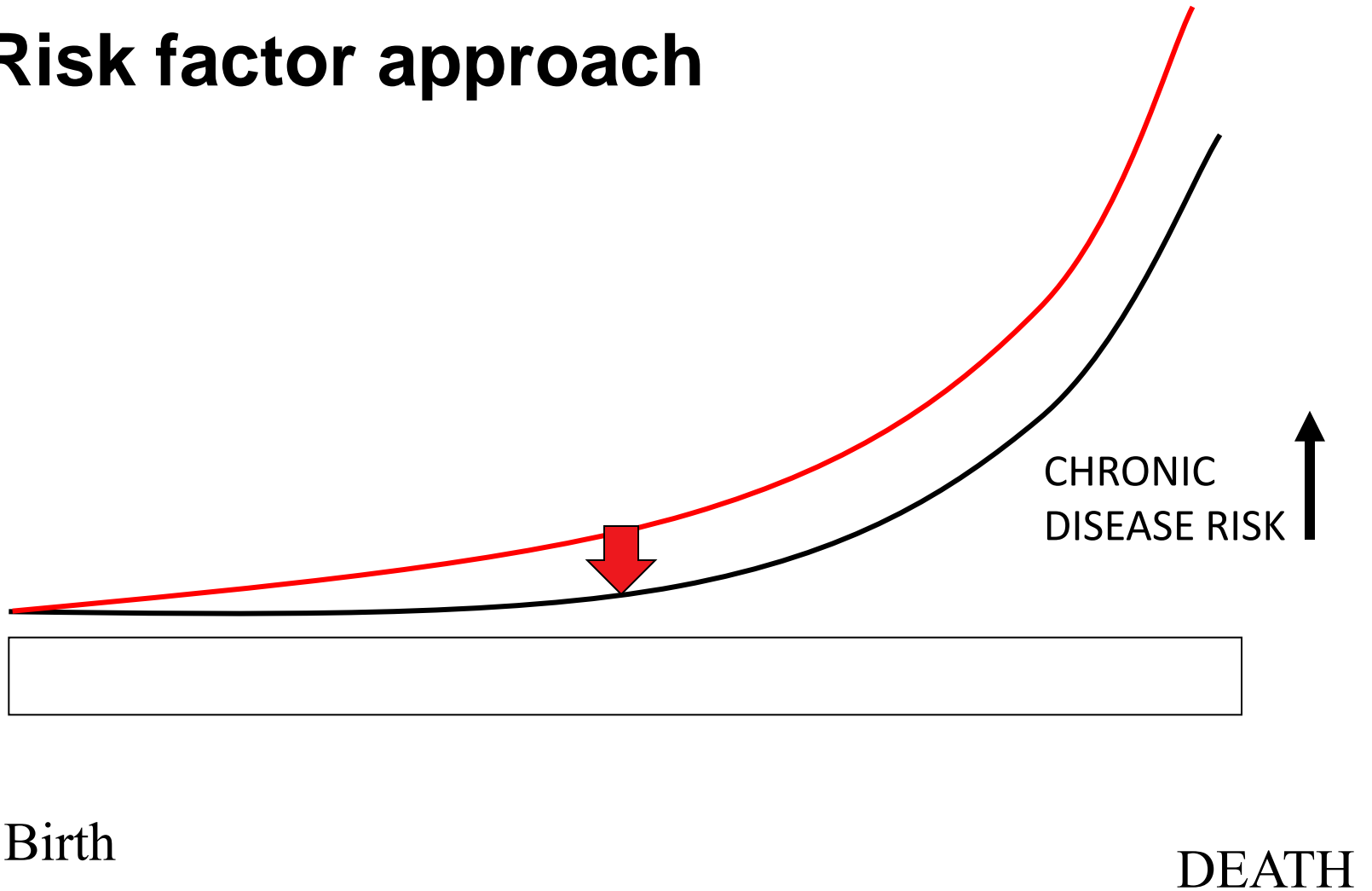
POPULATION health, INDIVIDUAL health, CELL health



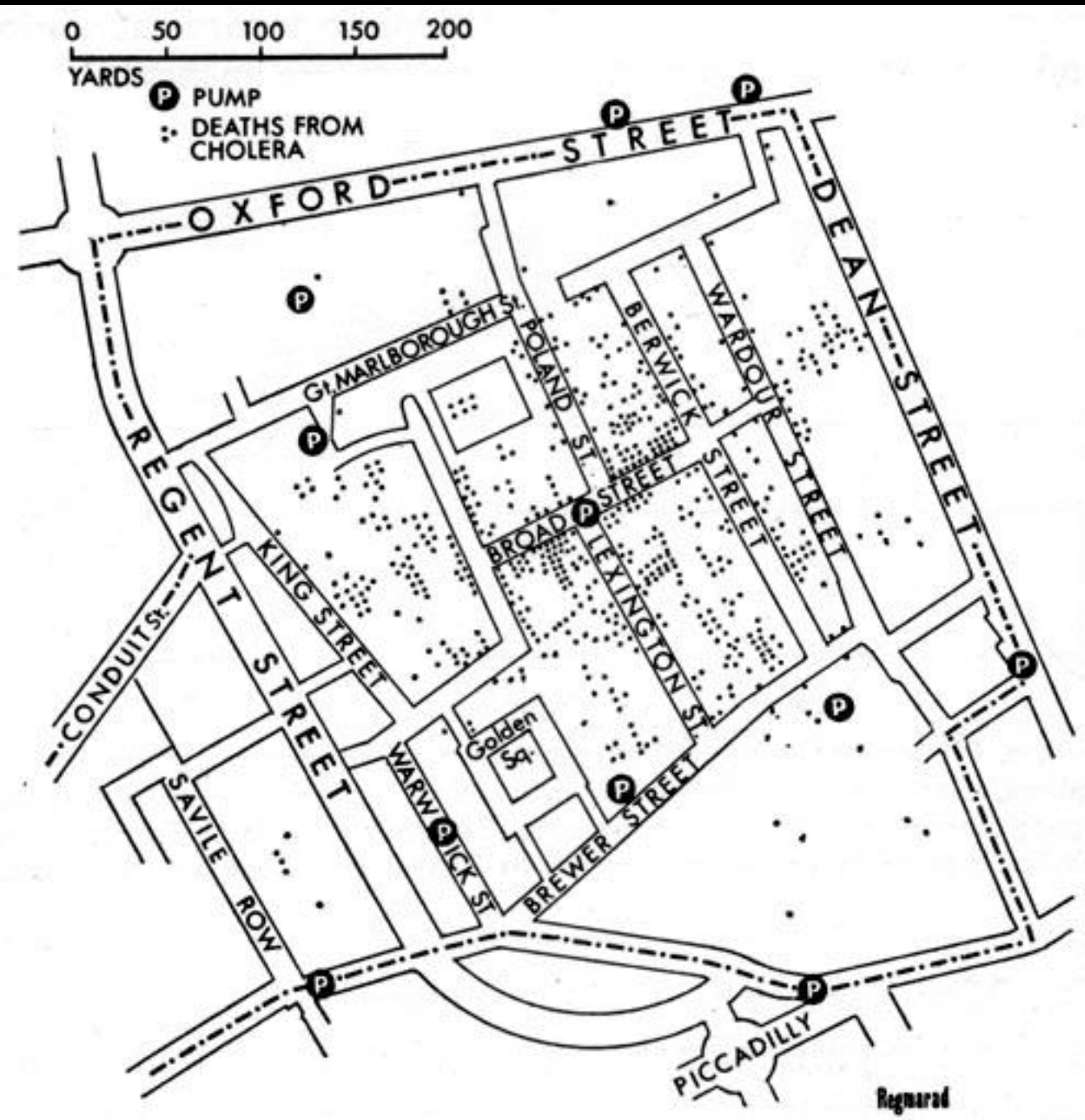
Disease approach



Risk factor approach



PRIMAL PREVENTION



Making Health a goal in the USA

Desired End Points

Long Healthy Life



Australian Government
Preventative Health Taskforce

AUSTRALIA: THE HEALTHIEST COUNTRY BY 2020



A discussion paper prepared by the
National Preventative Health Taskforce

OXFORD MEDICAL PUBLICATIONS

THE STRATEGY OF PREVENTIVE MEDICINE

GEOFFREY ROSE

(last paragraph) "The primary determinants of disease are mainly economic and social, and therefore its remedies must also be economic and social. Medicine and politics cannot and should not be kept apart."